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# Year End Review of Fermilab Performance



Pier Oddone



Fermilab



**PEMP Year-End Contract Measures Review**

**Sept. 21, 2009**



# Year End Review of Fermilab Performance

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### ◆ 1.1 Science and Technology Results Provide Meaningful Impact on the Field

- ◆ Wide coverage of Fermilab in general interest science magazines, newspapers, and other popular media (e.g., “Race for the Higgs”).
- ◆ **Science** - Fermilab continues to produce world leading results at the three frontiers of particle physics, maintaining its position as the most productive particle physics institution in the world today; e.g., see results presented at summer conferences, and throughout the year. As of 9/14/2009, 424 publications in FY 2009 refereed journals (i.e., non-duplicate physics and development results), including 122 Phys.Rev.Lett. , 103 Phys.Rev.D, ..., 2 Science, and 1 Health Physics.
  - ◆ **Energy Frontier**: fueled by the high integrated luminosities, the Tevatron has produced many results, graduating Ph.D.s at a rate of about 60/year and producing some 100 results/year. This strong performance motivates running the machine in 2011 which would double the present luminosity.



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Recent Tevatron Collider results:

- First exclusion of a significant region of Higgs masses. With the  $12 \text{ fb}^{-1}$  through 2011 we will exclude the allowed range or we are likely to see evidence for it.
- Evidence for a narrow near-threshold structure in  $J/\psi + \phi$  – now called the  $Y(4140)$  – a new particle.
- Single top production measurements by both experiments with better than 5 sigma significance.
- Improved top and W mass measurements, further constraining standard-model Higgs mass.
- Discovery of the  $\Omega_b$ .



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- ❖ **Energy Frontier:** At the LHC we provide the main support for the US community in CMS across a broad front: simulation and analysis, hardware commissioning and theory.
- ❖ **Energy Frontier:** For the LHC accelerator proper, we have provided critical aid to CERN in the repair and correction of design problems. Half the QPS Review Committee was staffed by Fermilab.
- ❖ **Energy Frontier:** Continued the development of ILC cryomodules and provided the case for a major investment of ARRA funds into SCRF infrastructure and industrialization; we are the leading institution in the development and design of muon colliders.



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- ❖ **Cosmic Frontier:** Completion of the Pierre Auger Observatory in Argentina. We play critical roles in operating the observatory, ensuring the integrity of the data, and understanding the systematic uncertainties.
- ❖ **Cosmic Frontier:** Dark matter searches with continued operation of CDMS and development of COUPP, both world leading in their DM-mass domains in the race for best limits for spin-independent and spin-dependent WIMP interactions, respectively.
- ❖ **Cosmic Frontier:** Recent publication by CDMS on axion search limits.



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- ❖ **Cosmic Frontier:** SDSS - New results help fill the "redshift desert", and provide the first dark energy results from a self-contained survey during the period actually dominated by dark energy. SDSS photometry has advanced understanding of supernovae as cosmic candles for future higher-redshift studies. Continued exploitation of SDSS where we serve the data to the community.
- ❖
- ❖ **Cosmic Frontier:** DES - We are the leaders of DES.
- ❖ **Cosmic Frontier:** JDEM – We are the leading candidate for the JDEM Science Operation Center.



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- ❖ **Intensity Frontier:** Delivery of protons on target (pot) for the high energy neutrino beam (MINOS) and the low energy beam (MiniBooNE), now 0.8 and  $1.3 \times 10^{21}$  pot respectively, more than any other beam in the world. NuMI reached 350 KW of power on target for MINOS.
- ❖ **Intensity Frontier:** The MINOS collaboration has presented first results on the electron neutrino appearance. It will have additional results with twice the statistics later in the year.
- ❖ **Intensity Frontier:** The MiniBooNE collaboration has presented new results with anti-neutrino running. The excess events appears to be a feature of neutrino not antineutrino interactions. Additional running should solidify this conclusion.





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- ❖ **Intensity Frontier:** SciBooNE already in the publication phase after just months from taking last data.
- ❖ **Intensity Frontier:** Development of the neutrino programs for both intermediate term (MicroBooNE, MINERvA, NOvA) and long range (LBNE to Homestake, both with water Cerenkov and liquid argon TPC detectors)
- ❖ **Intensity Frontier:** Development of the mu2e experiment.



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### ◆ 1.1 Science and Technology Results Provide Meaningful Impact on the Field (Continued)

- ◆ **Technology** - Fermilab continues to develop the technology needed to advance physics reach at all three particle physics frontiers, and for use more broadly.
- ◆ We are in transition from detector R&D that was a broad program at the Division level to satisfy many purposes, including support and improvements to existing facilities, support of technical know-how between projects, and advanced detector R&D - to a more coherently managed program with specific goals in advanced detector R&D.



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- ❖ **LAr for Long Baseline Neutrino Experiments:** Systematic pursuit of liquid-argon technology. In close contact with European collaborations that recognize that the many problems in the development of the technology (ICARUS is not working yet!) have been due to the lack of systematic approach to material tests and engineering.
- ❖ **Dark Matter Search Technology:** Development of technology for COUPP (bubble chamber) WIMP and axion searches and for GammeV (light-through-a-wall axion and chameleon searches) as leading search contenders. Also, improvements in detectors for CDMS. First successful demonstration of low-noise CCDs as dark-matter detectors.



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- ❖ **Auger North Detectors:** Developing new designs improved from Auger South results and experience.
- ❖ **3D Circuits:** Organization of the first 3D integrated-circuit submission for a Fermilab-led consortium of 15 national and international HEP laboratories.
- ❖ **Thin Si Detectors:** Bonded ultra-thin silicon sensor (75 microns) using the Direct Bond Interconnect technology provided by a U.S. vendor (Ziptronix).
- ❖ **ASIC Powering:** First successful production of serial powering ASICs for the next generation of experiments, addressing critical limitations of large systems.
- ❖ **Calorimetry:** Successful design, production, packaging, and testing of ASIC for a 400,000 channel digital hadron calorimeter test.



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- ❖ **ILC/SCRF:** First Fermilab nine-cell ILC cavity fabricated by U. S. vendor (AES) exceeds 35 MV/m in a vertical test after processing at JLab.
- ❖ **ILC/SCRF:** Successful processing of nine-cell cavity at joint ANL/FNAL EP facility.
- ❖ **ILC/SCRF:** First U.S. dressed ILC cavities fabricated at Fermilab.
- ❖ **Spoke Resonator Cavity:** World-record accelerating field (over 33 MV/m) for a 325 MHz cavity (HINS; first built in US industry; Roark Co., Indiana).



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- ❖ **High-Field Magnets:** Nb3Sn 90-mm quadrupole coil made of optimized strand developed by OST in collaboration with Fermilab tested in magnetic-mirror structure; demonstrated improved performance. This new RRP-108/127 strand was selected as a baseline conductor for LARP.

**Grade on 1.1: A**



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### ◆ 1.2 Provide Quality Leadership in Science and Technology

- ❖ **Strategic Planning:** The laboratory has been a leader in creating a national strategy that will sustain particle physics in the future. We now work with the community to implement that strategy within the budget constraints of the field
- ❖ **High Risk, High Payoff:** The Tevatron is an immensely complex machine that had high risk of not achieving the current performance. The present performance exceeds expectations, and has a large payoff. As shown by the LHC, massive accelerators comport large risks. We have helped LHC mitigate those risks



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by helping in the understanding and repair of the machine. There is high risk associated with future machines like the ILC and muon colliders, both technical and from physics. These are large strategic thrusts that could come to naught, but offer immense potential depending on the physics discovered at the LHC. JDEM as a space mission also has significant risks that are new for Fermilab.

- ❖ **Uniqueness and Challenges:** Many of our projects are unique: the Tevatron is the only proton-antiproton collider in the world, the neutrino beams the most intense in the world, the triplets the most challenging magnets in the LHC, the muon collider R&D and development of cryomodules for the ILC enormously challenging.



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- ❖ **Collaborations:** We carry out all our programs fully integrating universities and other laboratories. We have developed the strategic plan and are implementing it relying on national collaborations. Project X, for example, led by Fermilab, involves 9 national institutions. We also provide the main support for the four dozen US institutions on CMS. We work closely with LBNL, BNL, and LANL in the development of the LBNE. We collaborate world-wide on ILC development, and work closely with the Muon Collaboration in the development of a muon collider and neutrino factory. We are working closely with Indian institutions and have the support of the



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leader of the Indian Atomic Energy Agency to work on Project X and related developments. We are investing considerable effort in collaborations with Italian institutions that will participate in mu2e and the development of liquid argon TPCs for neutrino experiments.

- ❖ **Local Community Involvement:** We work closely with the surrounding communities on the impact of local-siting of future machines like ILC and on other issues.
- ❖ **Many education outreach efforts:** 38 programs involving as many as 200 staff members, Quarknet, Saturday Morning Physics, Family Science Days, student mentoring efforts by 56 staff members.



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- ❖ Six diversity programs involving 53 volunteers, including “High Energy – High Ambitions Day” during Black History Month attended by 270 students and their teachers.
- ❖ Worked closely with governmental agencies to monitor and control West Nile virus, gypsy moths, and emerald ash borer in DuPage and Kane Counties to minimize health risks.
- ❖ Accepted leaves from the nearby communities to enhance Fermilab’s agricultural resources. The neighboring communities benefit by not having to pay hauling fees and saving local landfill capacity.



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- ❖ **Staff Members:** Provide top leadership in many collaborations. Experiment spokespeople are usually elected. Presently CDF, DZero, MiniBooNE, mu2e, MIPP, Pierre Auger, CDMS, DES, and SDSS have project managers or spokespersons from Fermilab. A Fermilab staff member manages the national CMS program, and also a staff member is the head of the Collaboration Board for global CMS. Two members of Fermilab serve on HEPAP, and scientists and senior managers serve in numerous national and international advisory bodies.
- ❖ **Staff Members:** Provide significant support to DOE and its other laboratories (e.g.: ANL, BNL, JLab, LANL, LBNL, ORNL, PNNL, PPPL, Sandia, SLAC), NSF's DUSEL/Sanford Laboratory and NHMFL, and the major international HEP labs (e.g.: CERN, DESY, IPMU, J-PARC, KEK), serving on reviews, advisory boards, etc.



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- ❖ **Staff Members:** Provide significant support to other organizations: in HEP (IUPAP C11 chair, ICFA secretary and panel members, ILC GDE PAC and ILCSC multiple roles) regulatory (NFPA) and advisory groups, policy committees, boards, professional societies (APS), etc. See table of Staff Professional Outside Activities on next page to see extensiveness of this effort.

**Grade on 1.2: A**



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# Annual Review of Fermilab Performance

## Pier Oddone

### Staff Professional Outside Activities Summary Table

(from 151 responses to a September 2009 poll of professional staff)

Review panel member for the DOE, NSF, NASA or foreign funding agency ...	31
Grant application reviewer, for US or foreign funding agency .....	40
Review panel member for another laboratory .....	35
Support ICFA, ILC MAC, or similar HEP organization .....	7
Officer in a professional society, or similar activity .....	30
Editor for a professional journal .....	15
Reviewer for a professional journal .....	49
Organizer of non-Fermilab, international conference or workshop .....	65

(Staff members often contribute to multiple categories, but are only counted once per category.)



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# Year End Review of Fermilab Performance

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### ◆ 1.3 Provide and Sustain Science and Technology Outputs that Advance Program Objectives and Goals

- ◆ **Research outputs:** we are meeting or exceeding all goals for research results in present programs. We work closely with OHEP and all our programs are aligned and further the objectives of OHEP and the national program.
- ◆ **Successful advancement of future projects:** there are three projects moving forward successfully (NOvA, DECAM and Minerva). Planning for future projects is moving forcefully with MicroBooNE, mu2e, and the LBNE to Homestake and Project X at the intensity frontier; the JDEM operations center, COUPP 60 kg and CDMS-15 kg at the cosmological frontier; and LHC and CMS upgrades at the energy frontier.



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# Year End Review of Fermilab Performance

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- ❖ **Project X:** Complete design concept and associated preliminary cost estimate for a world-leading energy- frontier facility. Project X R&D Collaboration formed under Fermilab leadership, involving nine national institutions.
- ❖ **SRF:** Major investment in infrastructure and U.S. industrial development this year, in collaboration with other U.S. labs. Close coordination between Project X and ILC/GDE on SRF development.



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We have a stack of additional projects that provide future options , reviewed favorably by the AAC & PAC.

- ❖ **Publication:** Large production of important results in refereed journals, conference presentations, and production of PhD thesis.
- ❖ **Peer Review (FRA Visiting Committee):**
  - The recent FRA visiting committee was very complementary on the performance of the laboratory and the plans for the future. The committee felt embarrassed that it could not tell us how to do things better

**Grade on 1.3: A**



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### ◆ 1.4 Provide for Effective Delivery of Science and Technology

#### ❖ Goals/milestones/delivering on promises:

- Joule Goals: We exceeded the Joule goal for the year in the Tevatron and were nearly right on the Joule goal for neutrinos.
- Tevatron luminosity and neutrino proton-on-target power goals: somewhat above internal projections for the Tevatron and in range for the neutrino program
- Project development milestones: met
- Research promises: exceeded projections for CDF , DZero and MiniBooNE; exceeded projections for MINOS/NuMI (had not expected to have sensitivity for electron appearance).



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### Community:

- ❖ Results: all results reported promptly through conferences, the archival literature, Fermilab documents (e.g. Steering Group Report), and otherwise web-available sources.
- ❖ Workshops and Schools “sponsored” by Fermilab:
  - October 19-29, 2008
  - ISLC08 [Third International Accelerator School for Linear Colliders](#)
  - Oak Brook Hills Marriott - Oak Brook, Illinois
  - W. Chou, Fermilab
  - November 16-20, 2008
  - LCWS08 [International Linear Collider Workshop 2008: LCWS08 and ILC2008](#)
  - UIC Forum - Chicago, Illinois
  - N. Varelas, University of Illinois, Chicago



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### ❖ Workshops and Schools (continued):

- January 12-16, 2009
- JTermIII [J-Term III Workshop](#)
- Fermilab - Batavia, Illinois
- D. Green, Fermilab
- May 6-7, 2009
- HEPIRS09 [3rd HEP Informational Resource Summit 2009](#)
- Fermilab - Batavia, Illinois
- H. O'Connell, Fermilab
- May 11-13, 2009
- NDARDF09 [Workshop on New Directions for Accelerator R&D at Fermilab](#)
- The Lodge at Geneva Ridge - Lake Geneva, Wisconsin
- V. Shiltsev, Fermilab



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### ❖ Workshops and Schools (continued):

- June 8-12, 2009
  - [Low Emittance Muon Collider Workshop 2009](#)
  - Fermilab - Batavia, Illinois
  - M. A. Cummings, Muons, Inc.
- July 6-17, 2009
  - [The International Neutrino Summer School 2009](#)
  - Fermilab - Batavia, Illinois
  - S. Brice, Fermilab
- July 20-25, 2009
  - [Neutrino Factories Workshop 2009](#)
  - Fermilab - Batavia, Illinois (7/20) & IIT - Chicago, Illinois (7/21-25)
  - D. Kaplan, IIT, and J. Morfin, Fermilab



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### ❖ Workshops and Schools (continued):

- August 3-5, 2009
- [US-CMS J-Term IV School](#)
- Fermilab - Batavia, IL
- D. Green, Fermilab
- September 7-18, 2009
- [Fourth International Accelerator School for Linear Colliders](#)
- Beijing, China
- W. Chou, Fermilab
- September 21-24, 2009
- [Dark Matter Annihilation and the Interstellar Medium Workshop 2009](#)
- Fermilab - Batavia, IL
- A. Stebbins, Fermilab



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### ❖ Workshops and Schools (continued):

- September 21-25, 2009
- [Fixed Field Alternating Gradient Accelerator Workshop 2009](#)
- Fermilab - Batavia, IL
- C. Johnstone, Fermilab
- And work on preparations for additional planned events in the next year(s).

**Grade on 1.4: A**



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### ◆ Summary Remarks

- ❖ We are delivering on all fronts, and continue to find ways to improve the laboratory in both science and operations.
- ❖ We have an exciting strategic plan for the future, one with enough flexibility to respond to the new physics results from LHC and elsewhere.



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Ed Temple



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# Year End Review of Fermilab Performance

## Ed Temple

### ◆ 2.1 Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2).

- ❖ APUL (Accelerator Project to Upgrade LHC) has CD-0; holding Working Group Meetings (WGM); Dir CD-1 Rev July; ff-up Nov
- ❖ CMS Upgrade; CD-0 expected in or by Fall 2009; Project Management Group Meetings (PMG) as required
- ❖ Long Baseline Neutrino Experiment (LBNE) initial discussions with Project Lead; plan WGM; CD-0 expected soon
- ❖ MicroBooNE; holding WGMs; anticipate CD-0 soon; plan Dir CD-1 Rev in November
- ❖ Mu2e; beginning WGMs



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## Ed Temple

### ❖ 2.2 Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, Post CD-2 to CD-4)

- ❖ DECam (Dark Energy Camera); CD-3b 10/08;
  - Dir Rev 4/09; DOE/NSF Rev 7/09
- ❖ MINERvA; continues to receive close project oversight and support from senior Fermilab management during fabrication
  - 2 DOE Reviews & Fermi PMGs with Technical Consultants
- ❖ NOvA CD-3a 10/08; (Dir Rev 6/09 / DOE Rev 7/09) for CD-3b; replanning & providing resources to meet NOvA schedule
- ❖ CMS – Received award at DOE PM Workshop 3/09
  - “For demonstrating significant results in completing a project within cost and schedule”



# Year End Review of Fermilab Performance



Steve Holmes



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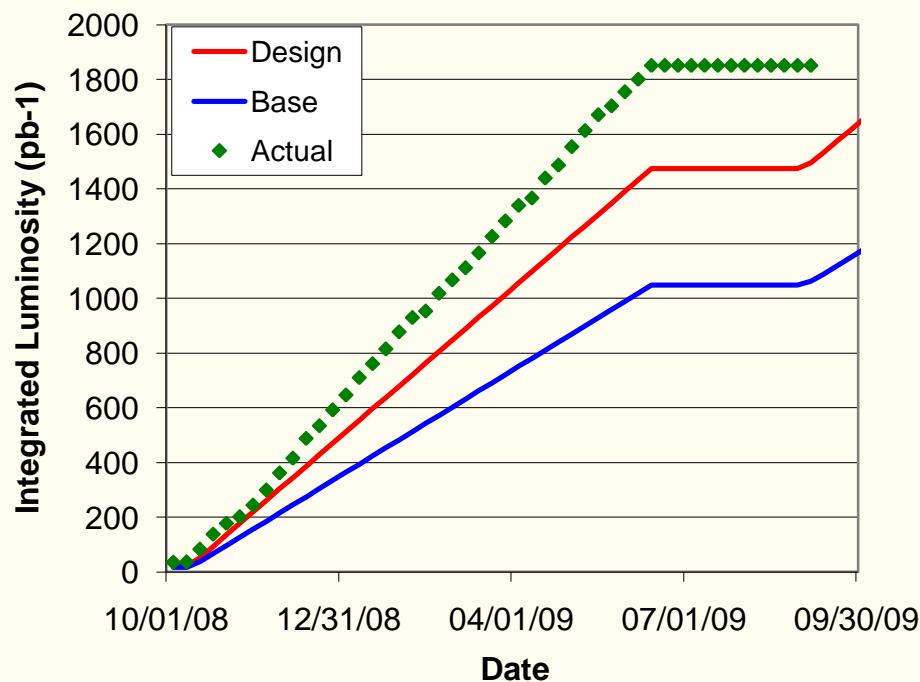


# Year End Review of Fermilab Performance

## Steve Holmes

### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: Delivered Luminosity

- ❖ Luminosity delivered to CDF and D0 (through 9/6/09) significantly exceeds design curve:  $1853 \text{ pb}^{-1}$
- ❖ Reliability above design goal: 112 hours/week of luminosity
- ❖ Shutdown initiated as planned June 15, 2009



# Year End Review of Fermilab Performance

## Steve Holmes

### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: Comparisons since FY2008

- ◆ Peak luminosity increased 11% ( $318 \rightarrow 353 \times 10^{30} \text{ cm}^{-2} \text{ sec}^{-1}$ )
- ◆ Weekly integrated luminosity up 28% ( $57 \rightarrow 73 \text{ pb}^{-1}$ )
- ◆ Monthly integrated luminosity up 19% ( $221 \rightarrow 264 \text{ pb}^{-1}$ )
- ◆ Peak antiproton stacking up 6% ( $27.0 \rightarrow 28.6 \times 10^{10} / \text{hr}$ )
- ◆ Weekly accumulated antiprotons up 25% ( $3000 \rightarrow 3770 \times 10^{10} / \text{week}$ )

# Year End Review of Fermilab Performance

## Steve Holmes

### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: Unscheduled Downtime

◆ Unscheduled downtime (through 9/6/09): 16%

◆ 5877 hours scheduled uptime

◆ 4945 hours actual uptime

◆ Significant downtime contributors:

- Power outage
- Transformer failure
- CHL compressor failure
- All were managed well and limited associated downtime to <1 week each



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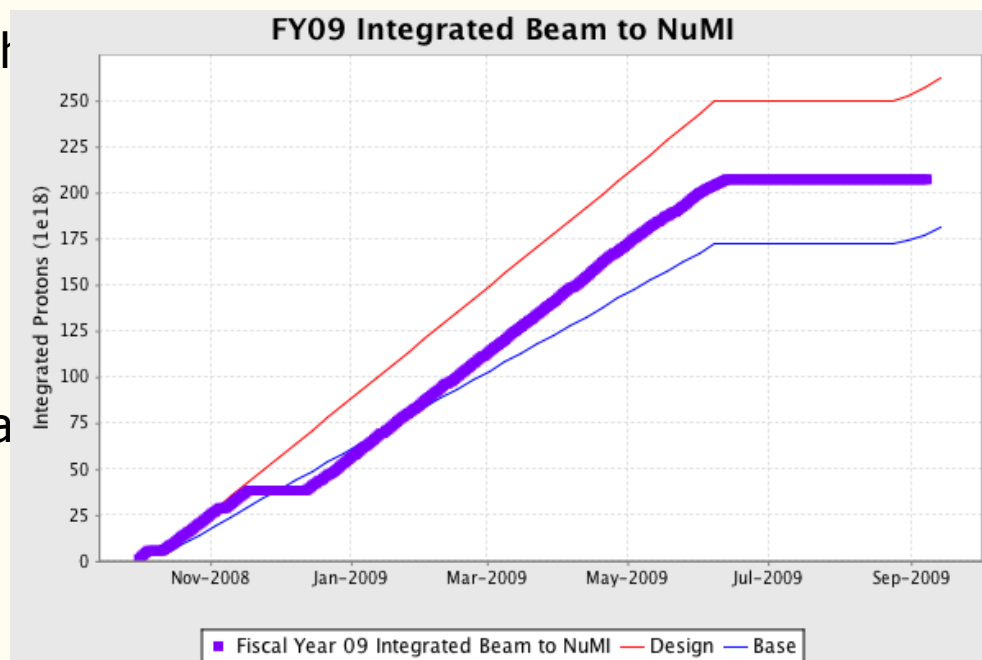
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## Steve Holmes

### 2.3 Provide Efficient and Effective Operation of Facilities: Neutrino Operations

- ❖ Delivered protons to NuMI (through 9/6/09):  $2.05 \times 10^{20}$
- ❖ Typical beam on target  $\sim 260$  kW
- ❖ Major downtime:
  - ❖ Horn 2 replacement
- ❖ Close to meeting FY2009 Joule goal of:  $2.2 \times 10^{20}$



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## Steve Holmes

### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: R&D to develop/expand capabilities

- ◆ Run II Improvement Plan completed in 2007
  - ❖ Current strategy is to maintain reliable operations at the current level of performance
- ◆ Proton Improvement Plan fully implemented with the installation of last complement of Booster Correctors
  - ❖ Completed during the FY2009 shutdown
- ◆ Design concept established for a multi-MW proton source to provide long term leadership at the intensity frontier
  - ❖ Tied to ILC technology
  - ❖ Supports future development of a muon-based energy frontier facility



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### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: ES&H

- ◆ Tritium mitigation program has resulted in no measurable releases to any off-site creeks this year.
- ◆ Injury Performance (October 2008 – September 2009)
  - ❖ AD: 4 DART cases
    - Higher than we would like, and higher than previous year
    - All cases investigated and responded to with mitigation measures
  - ❖ TD: 0 DART cases
  - ❖ APC: 0 DART cases

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## Steve Holmes

### ◆ 2.3 Provide Efficient and Effective Operation of Facilities: Summary

- ◆ Delivered luminosity exceeds the design curve for FY2009, and exceeded FY2008 despite 10 fewer weeks of operation
- ◆ Delivered protons to NuMI has exceeded the base curve and should meet Joule goal
  - ❖ Horn failure was the primary impact
- ◆ Unscheduled downtime has been less than anticipated, and better than goal
- ◆ Suggested grade for 2.3: A
  - ❖ Outstanding performance in the Tevatron complex, with very good performance in NuMI. Room for improvement on DART performance. Excellent progress on design concepts for future evolution of the facility



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## Greg Bock



Greg Bock



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## Greg Bock

### ◆ 2.4 Utilization of Facility to Grow and Support Laboratory's Research Base and External User Community

- ❖ Perform influential science: Major source of US HEP (and astro) results.
- ❖ Full use of facility for research base. Reuse of facilities; e.g. MINERvA and ArgoNeuT added to NuMI beamline, along with R&D tests; LHC Physics Center and Remote Operations Center; remote computing (GCC and LCC) in former fixed-target experiment areas; and ILC R&D (reusing MDB, NML, IBC areas). Modifications at MCenter for additional test beam capability. Preparing for reuse of KTeV Hall and beamline for E-906/Drell-Yan experiment (largely funded by ONP).



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## Greg Bock

- ❖ Strengthened by resident research community: Users directly involved in setting goals, planning, reviewing at Lab. Lab users also among leaders in research field.
- ❖ Peer reviews, participation in international design teams, program and staff reviews/oversight, etc.: Major role in LBNE planning, ILC GDE and its Technical Design Phase (TDP) and costing, SCRF teams (e.g., Tesla Technology Collaboration), Project X and Muon Collaboration.
- ❖ Thirteen DOE or DOE/NSF reviews; 7 topical Director's reviews; PAC, AAC, MuTAC, FRA Visiting Committee meetings, and many similar external/internal reviews at Division/Section/Center levels.



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## Greg Bock

- ❖ Healthy program of outreach to scientific community: Excellent Users Organization, fully supported by URA/FRA, and to wider scientific community through users at their own universities.
- ❖ National Environmental Research Park (NERP) - A resource for external users – a number of projects underway, the most notable including studies conducted by Argonne National Laboratory ecologists Julie Jastrow and Roser Matamala relating to carbon balance and sequestration by the prairie, and investigation of prairie plant community production for ethanol feedstocks, release of electronically tracked owls, and the introduction of endangered species of butterflies and their favored plants.



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**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Greg Bock

- ❖ Other site use by outside organizations: School and scout projects using Fermilab prairie and other features; neighboring towns spreading leaves on site (to enhance Fermilab's agricultural resources and to save local communities hauling fees and landfill capacity).

**Grade on 2.4: A**



Fermilab

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# Year End Review of Fermilab Performance

## Greg Bock

### ◆ 3.1 Provide Effective and Efficient Stewardship of Scientific Capabilities and Program Vision

- ❖ Clarity of vision and its effective expression by the Laboratory: recognized by users and oversight groups in reviews
- ❖ DOE OHEP encouragement to develop strategy for Fermilab being primary US particle physics laboratory: site of Intensity Frontier, and eventual US site for potential ILC construction.



# Year End Review of Fermilab Performance

## Greg Bock

- ❖ Joint planning with outside community: Project X physics workshops and accelerator collaboration meetings involve the widest possible participation. Vision for the future requires and involves nine major accelerator laboratories in the US.
- ❖ Developing core competencies in established areas (e.g., accelerator design and operations, detector and computing techniques) and new areas (e.g., superconducting rf and 3D electronic devices).
- ❖ Develop ideas for new facilities: Focus on Project X and options for maximizing physics reach and flexibility for future programs, starting with high intensity proton beams for long-baseline neutrino experiments, but also for high-intensity muon, kaon, and other experiments at the Intensity Frontier of particle physics. In addition, serious efforts on accelerator R&D and physics motivations for the option of an eventual neutrino factory and muon collider – building on the Project X front-end accelerator.



# Year End Review of Fermilab Performance

## Greg Bock

- ❖ Many staff members serve on national and international reviews, studies, and planning committees – providing insight for others and keeping Laboratory abreast of efforts, successes, and problems elsewhere. See table in Section 1.2.
- ❖ Staff retention/attractiveness. We compete well with top universities.
  - Awards: Staff serve as APS DPF, DPB, FIP officers. Patty McBride-IUPAP C11 chair. Bill Bardeen, Pushpa Bhat, and Craig Hogan-Fellows of the American Association for the Advancement of Science. Also: Keith Ellis-new Fellow of the Royal Society (UK) and J. J. Sakurai Prize for Theoretical Particle Physics (with D. Soper and J. Collins), CDF collaborators Luciano Ristori and Aldo Menzione-APS 2009 W.K.H. Panofsky Prize (silicon tracking & trigger), Gaston Gutierrez-APS Edward A. Bouchet Award, Roy Rubinstein-Jose Bonifacio medal (Brazil), Chris Quigg-Humboldt Award, Rob Roser, Vladimir Shiltsev, and G.P. Yeh-new APS Fellowships, Kiyomi Seiya-Part. Accel. Conf. award (slipstacking), Ryoichi Miyamoto-APS Award for Outstanding Beam Phys. PhD Thesis (Tevatron AC Dipole), Grzegorz Deptuch-Radiation Instrumentation Early Career Award from the IEEE Nuclear and Plasma Sciences Society, Gabriel Caceres-DOE's first Science and Energy Research Challenge Award, Marie Herman-Desk Demon Management Support Fellowship Award, Florencia Canelli UC/FNAL) Sloan Fellowship, Janet Conrad(MIT)-Simon R. Guggenheim Memorial Foundation Fellowship to work on a new detector for large liquid argon experiments at MIT and Fermilab. Craig Group-DOE SC Workforce Development for Teachers and Students Outstanding Mentor Award.

**Grade on 3.1: A**



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Greg Bock

### ◆ 3.2 Provide Effective and Efficient Science and Technology Project/Program Planning and Management

- ❖ Quality of R&D and strategic plans: recognized very favorably in reviews.
- ❖ Thirteen DOE or DOE/NSF reviews; 7 topical Director's reviews; PAC, AAC, MuTAC, FRA Visiting Committee meetings, and many similar external/internal reviews at Division/Section/Center levels.
- ❖ Office of Project Management and Oversight: mentoring and training of staff for the many new projects and their effective completion using DOE oversight framework. Technical risk management, a notable focus of added effort in projects.
- ❖ DOE approved Fermilab IQA program. Nearing Earned Value Management System certification for FRA.
- ❖ Making tough decisions: written discouragement of attractive physics opportunities following review by PAC and consideration of anticipated future budgets.



Fermilab

**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Greg Bock

### ◆ Recognition of management – FY2009:

- ❖ DOE Award for Achievement to U.S. CMS at the 2009 DOE Project Management Workshop.
- ❖ National Landscaping Award from the Chicago Wilderness Congress and the US EPA for the work over the last decade to create the Nepese Marsh from the old Weston sanitary oxidation ponds in the village.
- ❖ Federal Electronic Reuse and Recycling Challenge (ERRC) bronze award (again) in FY 2009 for our work in FY 2008. Also, received at the White House this year: Office of the Federal Environmental Executive, Federal Electronics Stewardship 2008 Electronics Reuse & Recycling Campaign Winner- Midwest Medium Civilian Facility Category.



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Greg Bock

- ❖ National accreditation awarded to Fermilab Day Care Center.
- ❖ National Safety Council Fleet Perfect Record Award (presented to BSS Transportation Department, covers 11/1/2007-and continuing).
- ❖ Quad Counties Urban League award for Outstanding Support for Tomorrow's Scientists, Technicians and Managers.

**Grade on 3.2: A-**



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Greg Bock

### ◆ 3.3 Provide Efficient and Effective Communications and Responsiveness to Customer Needs

- ❖ Weekly and ad hoc meetings with DOE to ensure effective and up-to-date communications. DOE participation in internal Project Management Group meetings, All Experimenters' Meetings, and the like. Web-based reporting available to & for DOE regularly updated.
- ❖ Direct notifications during the year of multiple levels of DOE as soon as any significant operational issues are known, both positive and negative events.



# Year End Review of Fermilab Performance

## Greg Bock

- ❖ New formal Points of Contact identified at Fermilab to match new OHEP organization.
- ❖ Large number of conferences and workshops organized and held at/near Fermilab to help communicate local program and define the future: 7 conferences/workshops, plus 5 schools (including help with ILC School in Beijing - Sept., 2009), and Annual Users Meeting.

**Grade on 3.3: A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Young-Kee Kim



Fermilab



**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

◆ **Target 4.1.1.1: Laboratory Vision and Business Plans (strategic and annual) meet all established DOE requirements, including quality of documents, clarity, conciseness, overall usefulness, and Laboratory implementation aligns with the vision/plans.**

- ❖ The strategic plan has been well documented and has been made publically available.
- ❖ Together with DOE HEP, the laboratory has been implementing this plan.

# Year End Review of Fermilab Performance

## Young-Kee Kim

- ❖ The strategic plan for Fermilab is based on the concept of three interrelated frontiers: the energy, intensity, and cosmic frontier. The work of the Fermilab Steering Group on the ten-year roadmap for an accelerator-based program (energy and intensity frontiers), and Fermilab's strategic plan for the cosmic frontier were presented to the national roadmap panel (P5, Particle Physics Project Prioritization Panel) and became a significant part of the strategic plan for the national HEP program. Fermilab plan is well aligned with the national strategy and the DOE HEP vision, and this has been praised by various external review and advisory committees.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

- ❖ The OHAP (Organization and Human Asset Plan) has been developed as a tool to analyze and guide the evolution of workforce needed to carry out the strategic plan. The entire lab. organization has been involved in this one coherent process. A number of task forces were commissioned for various critical skills, in particular, engineering and project management, to support the process. The output of the OHAP has been implemented in staffing plan, resulting in new contract hires and a small number of permanent staff.
- ❖ Summer 2009, the laboratory launched the third iteration of the OHAP process in order to improve the accuracy of data for current resources and resource needs for the ten-year plan, to produce the deliverable resource loaded schedule for the near-term program, and to provide an approach to fulfill these long term Program needs. The Strategic Engineering Planning Committee was formed to help this process for the technical staff (Engineers, Designers, and Technicians).





# Year End Review of Fermilab Performance

## Young-Kee Kim

- ❖ Summer 2009, the laboratory launched the third iteration of the OHAP process in order to improve the accuracy of data for current resources and resource needs for the ten-year plan, to produce the deliverable resource loaded schedule for the near-term program, and to provide an approach to fulfill these long term Program needs. The Strategic Engineering Planning Committee was formed to help this process for the technical staff (Engineers, Designers, and Technicians).



# **Year End Review of Fermilab Performance**

## **Young-Kee Kim**

- ◆ **Target 4.1.2.1: Strategic partnerships are established that support the Laboratory's scientific leadership, the leveraging of DOE resources, and support collaborative programs with key government, industry, laboratory, and university entities. The Laboratory establishes and fosters effective external communication that builds support for mission accomplishment, such as maintaining appropriate relations with the community to include providing for open and honest communications and establishing and maintaining long-term partnerships/relationships that advance the Laboratory Vision and Strategic Business Plan and help to shape the High Energy Physics community support.**



# Year End Review of Fermilab Performance

## Young-Kee Kim

- ❖ The laboratory has continued its policy of full information and transparency to all stakeholders.
- ❖ The laboratory works with the community in multiple forms and across a broad front.
  - With the output of the Steering Group that reached out input from the community in developing the roadmap, the laboratory participated proactively in the P5 process in developing the national roadmap.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

- In implementing the roadmap into the program, the laboratory continued to host accelerator and physics workshops and collaboration meetings.
- The laboratory continued to use International Fellow Program to bring the international community to Fermilab program.
- The laboratory initiated International Neutrino Summer School (the first school at Fermilab in July 2009), and continued to host CERN-Fermilab Hadron Collider Physics Summer School.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

- The laboratory developed strong collaboration with ANL in accelerator and detector development, cosmological computation, and accelerator education program.
- The laboratory developed strong collaboration with ANL, BNL, JLab, LANL, LBNL, SLAC, and university groups in the R&D program towards the intensity frontier programs (long-based line neutrino experiments and muon-to-electron conversion experiment), a neutrino factory and a muon collider.
- The laboratory provides strong support for LARP and APL (FNAL, LBNL, SLAC, BNL) towards upgrades of the LHC.
- The laboratory develops strong collaboration with Japan, India, and China.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

- ❖ The laboratory continued old and established new strategic partnerships and communications with the public that support Fermilab's vision and plans.
  - Fermilab continues to take a leadership role in the InterAction collaboration
  - Fermilab and CERN work very closely together on LHC communications
  - Fermilab and SLAC jointly publish *symmetry* to keep stakeholders informed about topics and developments in the HEP community.
  - Fermilab recruited about 40 local stakeholders for a November meeting to get input on the formation of and charge to a new community advisory board



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**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Young-Kee Kim

- Fermilab updated its public Web site
  - The design follows the DOE Draft Directive on Web site design and the content supports the DOE Office of Science mission
  - The science pages highlight the connections of the Fermilab research program to the three frontiers outlined in the joint DOE/NSF P5 report
  - The Recovery Act pages summarize Fermilab's role and achievements and provide content for the DOE Web pages
  - New Web sites for Project X and the Muon Collider help support the communication efforts of the HEP Users community



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**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Pier Oddone



Pier Oddone



Fermilab

**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Pier Oddone

◆ **Target 4.2.1.1: DOE evaluation, with input from reviews; operational awareness activities; and self-assessments completed within the performance period , indicates that Leadership proactively and effectively identifies and addresses opportunities for improvement.**

- ◆ We systematically track outcomes and actionable recommendations from all reviews (in a database), prepare corrective action plans and close concerns.



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Pier Oddone

- ❖ We have reorganized the laboratory to create an Associate Director position for Computing Science and Technology and CIO . The AD will manage scientific computing and IT infrastructure. This will result in improved performance across the laboratory as we modernize and make a more coherent infrastructure.
  - Review overall enterprise architecture
  - Electronic Document Management System
  - Dashboard
  - Coherent integration of personnel, budgeting and program planning tools



Fermilab

**PEMP Year-End Contract Measures Review**

**Sept. 21, 2009**

# Year End Review of Fermilab Performance

## Pier Oddone

- ❖ Development of the engineering manual continues, a living document!
- ❖ APS Diversity Study done, focus-group follow ups, action plan being developed.
- ❖ Focus Groups activities and management improvement initiatives.
- ❖ Working with program managers to structure requests for information and budgets



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Pier Oddone

- ❖ Completion of the IQA plan, the “As Is” Audit, Guideline for Scientific Research, and Graded Approach Procedure.
- ❖ Partial implementation of Fermilab Time and Labor – need more integrated authentication system
- ❖ Organization chart project
- ❖ Working towards EVMS certification; nearing completion.

**Grade A-**



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Pier Oddone

◆ **Target 4.2.2.1: DOE evaluation of issues that arise within the performance period, with input from reviews and operational awareness activities, indicates that Leadership responses are appropriate, effective, and timely.**

- ◆ Timely response to ARRA funding opportunities (e.g., NOvA, SCRF, etc.)
- ◆ We track findings and respond to recommendations.
- ◆ More importantly, we assume a pro-active role in discovering problems ourselves and taking the initiative to improve the laboratory.



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**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance



Cindy Conger



Fermilab



**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Cindy Conger

- ◆ **Target 4.2.3.1: An FY 2009 CODB report is required for each of the quarters ending December 31, March 31, June 30, and September 30. Reports are to be submitted to FSO within 30 days after the close of the reporting period.**
- ◆ The Cost of Doing Business reports for the quarters ended December 31, March 31, and June 30 were submitted to FSO on time.



# Year End Review of Fermilab Performance

## Cindy Conger

- ❖ The March 31 and June 30 reports were accompanied by detailed analytical comments from the CFO in order to enhance DOE-FSO's understanding of fluctuations in the laboratory's costs.
- ❖ The September 30 report will be submitted on time by October 30, 2009, accompanied by CFO analysis.
- ❖ The laboratory has exceeded the requirements of the measure by providing the detailed CFO analysis.

**Grade A-**



Fermilab

**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Cindy Conger

- ◆ **Target 4.2.4.1: Develop an FY 2009 CODB Cost Savings Study that identifies major cost categories, cost drivers, and cost elements (fixed and variable) and potential cost savings within each category. The Cost Savings Study shall consider current and future expenses and funding. The FY 2009 CODB Cost Savings Study is to be delivered to FSO by April 30, 2009.**
- ❖ Fermilab's Cost Savings Study was delivered to FSO on April 30, 2009. The report identified major cost categories, the cost drivers within those categories, and potential cost savings within those categories.



# Year End Review of Fermilab Performance

## Cindy Conger

- ❖ At FSO's request, an update was provided in July, 2009 on the status of the cost savings activities in progress.
- ❖ The laboratory exceeded the requirements of the measure by providing the July status update.
- ❖ **Grade A-**



# Year End Review of Fermilab Performance



Larry Hill



Fermilab



**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Larry Hill

- ◆ **Target 4.3.1.1: An independent peer review of Laboratory management systems and processes is conducted annually. Reviews identify strengths, weaknesses, areas of significant risks, and opportunities for improvement. The number of significant issues raised in other non-corporate reviews should be minimal.**
- ◆ FY2009 Visiting Committee for Science Programs Review conducted on April 9-10, 2009
  - Chaired by Marjorie Shapiro and included Frank Sciulli and Chuck Shank from the FRA Board
  - Positive review overall with no major findings or concerns

# Year End Review of Fermilab Performance

## Larry Hill

- ❖ FY2009 Visiting Committee for Administration and Operations Review conducted August 2-5, 2009
  - Chaired by Dean Helms; did a general review of operations with a focus on IT, budget/accounting implications of ARRA funds and the ongoing implementation of the QA plan
  - Positive review overall with no major findings or concerns



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Larry Hill

- ◆ **Target 4.3.2.1: DOE evaluation, with input from reviews and operational awareness activities done within the performance period, indicates that important issues are resolved appropriately. Effective Corporate Leadership in resolving important issues and Departmental concerns.**
- ❖ Corporate leadership from URA and the University of Chicago routinely meet with senior DOE officials to discuss scientific and operational issues facing the Lab

# Year End Review of Fermilab Performance

## Larry Hill

- ❖ Don Levy (Chicago) and Fred Bernthal (URA) are members of the DOE National Laboratory Contractors Group, created by DOE Secretary Steve Chu; the Committee submitted a set of recommendations to the Secretary in August 2009 regarding ways to improve the overall operation of the National Labs and the relationship between DOE and its contractors.
- ❖ The focus of the FRA Board will shift away from development of a strategic plan, which it and the Visiting Committee have endorsed, to implementation of the plan
  - The June 2009 meeting featured breakout sessions on the three frontiers and outreach
- ❖ All issues from the FY08 Admin and Ops Review either have been resolved or are on track to be resolved by the Lab to the Board's satisfaction.



# Year End Review of Fermilab Performance

## Larry Hill

- ◆ **Target 4.3.3.1: The corporate office ensures that commitments made in the contractors offer/proposal (if applicable), and significant corporate commitments made to DOE during the current performance period are successfully accomplished as planned and acts as an effective advocate for the Laboratory.**
- ❖ Corporate operations and financial commitments are on track with continued focus on:





# Year End Review of Fermilab Performance

## Larry Hill

- ❖ Corporate operations and financial commitments are on track with continued focus on:
  - Lab Collaboration Council
    - The Lab Collaboration Council was officially established on June 13, 2007, and continues on at present with routine meetings of the Fermilab and Argonne Deputies for Operations. The majority of operational improvements have been in the area of sharing of best practices and expertise, e.g., safety, management dashboard, travel, and participation on review teams.



Fermilab

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# Year End Review of Fermilab Performance

## Larry Hill

- Quality Assurance program implementation
  - The OQBP was established at the start of the new contract. Current activities include the supervision of the EG&G contract and the development of the DOE O 414.1c based QA program.
- Management Dashboard
  - A total of \$200k was provided in first two years, and another \$100k has been provided in this fiscal year. The management dashboard software has been purchased, and the dashboard is now in test phase.



# Year End Review of Fermilab Performance

## Larry Hill

- Joint Appointments
  - The University of Chicago continues to provide partial salary support for Dr. Craig Hogan, Director of the Center for Particle Astrophysics and Professor in the Department of Astronomy and Astrophysics and Kavli Institute for Cosmological Physics, for Dr. Florencia Canelli, Assistant Professor, Department of Physics, and for Dr. Richard Kron, Professor, Department of Astronomy and Astrophysics. Another joint search is underway in the area of particle phenomenology.



Fermilab

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# Year End Review of Fermilab Performance

## Larry Hill

- The University of Illinois is providing  $\frac{1}{2}$  salary and start-up for Dr. Richard Cavanaugh, a joint appointee between UIC and Fermilab.
- Northern Illinois University is providing 50% salary support for Dr. Philippe Piot, who has a joint appointment with Fermilab.
- Searches are either presently underway or about to be launched with Northwestern University and the Illinois Institute of Technology



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Larry Hill

- Joint Research and Education
  - Approximately \$500k to support joint research projects has been provided in the first two years of this program. An additional \$217,000 in awards for FY09 competition award start dates of Aug 1, 2009 (amount does not include indirect costs)
  - A joint Ph.D. program in accelerator physics and a joint Masters degree program in RF Engineering have been implemented with Northern Illinois University.



Fermilab

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# Year End Review of Fermilab Performance

## Larry Hill

- The University of Chicago is providing ½ tuition support to 5 dependent children of Fermilab employees who have been accepted to the College of the University of Chicago. The cost of this benefit, which was added after the contract was accepted, is approximately \$90,000 per year.
- One child of a Fermilab employee is being supported as a junior in the Bienen School of Music at Northwestern University.
- Currently one undergraduate student at Northern Illinois University is receiving a scholarship through this program (valued at approximately \$13k per year) though there is opportunity for a second scholarship for an accepted student.



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Larry Hill

- University of Chicago Strategic Laboratory Leadership Program (SLLP)
  - The third cohort (year 3 of the program) of 10 Fermilab participants has been selected and got underway on May 11, 2009. The cost to the University for the price of Fermilab attendance has increased from \$80k per year to \$84k per year.



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance



Nancy Grossman



Fermilab



**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.1.1: DART $\leq 0.25$

- ◆ The DART rate (September 7th, 2009) is 0.64 (12 DART cases).
- ◆ We did not meet our goal this fiscal year, however we engaged several ideas to reduce the injury rate. Examples include Take 5 for Goal 0, Glove Campaign, Summer ES&H Fair, Accelerate to a Healthy Lifestyle exercise program, Benchmarking exercises (Cheryl Cabbil visit and INL), increased communication in scheduling meetings on preventative techniques.
- ◆ Examples of our DART cases include:
  - Back strain (5), Deep tissue contusion (1),
  - Fall on ice resulting in medical treatment and lost time (2), Goose attack (1),
  - Shoulder strain (1), and
  - Knee strain (2)

**Grade – B**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.2.1: TRCR $\leq 0.65$

- ◆ The TRC rate (September 7<sup>th</sup>, 2009) is 1.22 (25 recordable cases).
- ◆ We did not meet our goal this fiscal year, however we engaged several ideas to reduce the injury rate Examples include Take 5 for Goal 0, Glove Campaign, Summer ES&H Fair, Accelerate to a Healthy Lifestyle exercise program, Benchmarking exercises (Cheryl Cabbil visit and INL), increased communication in scheduling meetings on preventative techniques.
- ◆ Examples of our recordable cases include:
  - 12 DARTs mentioned on previous page
  - Lacerations requiring medical treatment (8), Hearing loss (2), Finger fracture (1), and Insect Bites requiring prescription medication (2)

### ◆ Grade – B



Fermilab

PEMP Year-End Contract Measures Review

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.3.1: 95% of non-compliances that meet the established DOE threshold of 10 CFR 835, 850, 851 are reported within NTS within 20 days of recognition.

There have been six ORPS occurrences entered thus far during the reporting period.

100% were entered within 20 days of recognition, thus exceeding the goal.

- ◆ Two of the ORPS reports from FY09 resulted in an entry into the NTS system. In addition, there was one non-ORPS issue that was submitted in April 2009 (system for tracking instrument calibration does not clearly indicate items past due from items that are out of service).
- ◆ NTS-FSO-FNAL-2009-001 – Slipping results in broken forearm.
- ◆ NTS-FSO-FNAL-2009-002 - On 4/9/2009, a problem with tracking the calibration status of radiation protection instrumentation was identified. Thus the submittal to NTS was made within 20 days of recognition.
- ◆ NTS-FSO-FNAL-2009-003 – 12 Volt Battery Explosion.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

- ◆ **Target 5.1.3.2: 90% of the corrective actions that result from each non-compliance scheduled for completion during the performance period are completed as scheduled.**
  - ❖ All corrective actions associated with the entries made into the NTS system have been completed or are scheduled for completion and on track.
  - ❖ In addition, events, incidents, injuries and near misses are analyzed every quarter to identify programmatic trends. No such trends have been identified during this performance period. **This exceeds the goals of 90%.**

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.1.4.1: Innovations or improvements that can credibly improve the control of future radiation exposures are documented. One point will be credited for each identification. An additional point will be awarded for implementation of the identified improvement. B+ = 8 Points**

- ◆ Through September 3, 2009, 6 such opportunities have been identified and implemented. Thus, 12 points have been accrued. [This exceeds the goal of 8 points.](#)
- ◆ [Some examples include:](#)
  - Reduction in Intensity prior to Shutdown activities
  - Reduced Intensity Startup
  - Elimination of unnecessary ALARA Steps based on actual situation
  - MINERvA mapper modifications

◆ **Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.1.5.1: 100% of all tasks for which the TEDE exceeds 200 person-mrem are reviewed in accordance with the existing Fermilab ALARA Program.**

- ◆ Through September 3, 2009, 949 tasks were reviewed.
- ◆ 139 required planned initial coverage anticipating a collective dose greater than 100 person-mrem.
- ◆ 30 jobs anticipating collective dose greater than 200 person-mrem were identified.
- ◆ 100% of tasks for which TEDE exceeded 100 person-mrem were reviewed in accordance with the Fermilab ALARA program.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

- ◆ **Target 5.1.6.1: 100% of all energized electrical work on power distribution systems over 50 volts is reviewed by the Fermilab Chief Operating Officer.**
- ❖ No work on energized power distribution systems has been proposed to the Chief Operation Officer.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

- ◆ **Target 5.1.7.1: 95% of all OSHA recordable injuries that occur on site to Fermilab employees, subcontractors, and users have a formal causal analysis performed which incorporates Human Performance Improvement tenets, within 30 days of a recordable incident determination.**
  - ❖ A causal analysis was done for each of the 25 recordable injuries. They identified a variety of contributing factors. Communications, human performance and management problems were all identified as causal factors.
  - ❖ The Injury Illness Subcommittee reviews each case and discusses causes and corrective actions. Last year the CAIRS database was upgraded to include causal analysis fields. This assures that the analysis is done and entered before the CAIRS can be verified and uploaded.
  - ❖ One hundred percent of the recordable cases were analyzed for causal analysis, thus exceeding our goal of 95%.

**Grade – A**



**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.8.1: Follow FY09 schedule for implementation of 10 CFR 851 assessments to be performed during the review period

<i>Assessments to be Completed in FY2008</i>	<i>To be Conducted By:</i>
10 CFR 851.20 – Management Responsibilities and Worker Rights and Responsibilities	Senior Safety Officers
10 CFR 851.21 – Hazard Identification and Assessment	Senior Safety Officers
10 CFR 851.22 – Hazard Prevention and Abatement	Senior Safety Officers
10 CFR 851 Appendix A – Industrial Hygiene	Industrial Hygiene Subcommittee

- ◆ This year the Laboratory committed to four assessments on the implementation of the 10 CFR 851 standards. This list of assessments and assessors is above.
- ◆ All four of the assessments have been completed with excellent results. Although minor gaps have been identified, it is important to note that the Laboratory's program is in compliance with the elements of 851.

### ◆ Grade – A



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.9.1: 95% of corrective actions resulting from documented FSO assessment reports, and scheduled for completion during the performance period, are completed on time.

- ◆ During this performance period there were six FSO Reviews conducted that involved the ESHS. They included: Injury/Illness Recordkeeping, Fall Protection Effectiveness Review, Radioactive Materials (Tracking, Managing and Storage), 10 CFR 851 Program Implementation, ISM Effectiveness and the Accelerator Safety Order Review.
- ◆ The Laboratory has submitted a corrective action plan for each review.
- ◆ All actions for the injury/illness review have been completed. We are on track to complete all corrective actions associated with the other reviews.
- ◆ Examples include: updating our medical form 5; performing quarterly QA checks on entries into the CAIRS database (regardless of severity); updated training records; updating Hazard Analyses; updating the fall protection training and other relevant FESHM Chapters

**Grade – B+**

# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.1.10.1: Fully implement improvements to the CAS that were identified in the February 27, 2008, FSO CAS report. This includes completing any actions remaining from FY 2008 and those scheduled for completion during this performance period.**

- ◆ Many of the findings have been addressed and those that remain open will be closed before the end of the calendar year.
- ◆ Failure to fully implement all of the corrective actions stemmed from a reorganization of the ES&H Section as well as lack of IT support for the section.
- ◆ A follow up review completed in April 2009 demonstrated that some of the CAS findings from the December 2008 review were completed while others needed additional work to consider them fully implemented. There were four findings associated with the April 2009 review.



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.1.10.1: (continued)

The Laboratory now has a *Fermilab Integrated Contractor Assurance Program* document.

- ◆ Written at the end of October 2008, this plan describes the system of assessments, event reporting, worker feedback mechanisms, issues management, lessons learned, and performance measures that ensure the contractor systems are operating effectively and efficiently.
- ◆ It is designed to assist in identifying opportunities for improvement and providing the means and requirements for identifying deficiencies and reporting them to responsible line management.
- ◆ Additionally, it establishes processes for effectively implementing corrective and preventive actions and sharing lessons learned across the laboratory and DOE complex.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.1.1: $\geq 95\%$ of required safety-related training identified in ITNAs is completed by Fermilab employees

- ◆ Completion of Individual Training Needs Assessments and required ES&H training receives a high level of attention by senior management.
- ◆ During the contract year of October 1, 2008 through September 30, 2009 thus far, 2,027 of the Laboratory's 2,122 employees (95.5%) had an ITNA performed for them.
- ◆ The ITNA completion rate is tracked on the Leading/Lagging indicators table.
- ◆ Weekly, the completion rates are given to senior laboratory managers at the Scheduling Meeting.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ **Target 5.2.1.2: Completion of required ES&H training for all employees is tracked and status is discussed at senior managers meetings.**

- ◆ Of the 25,875 required ES&H courses, 24,763 (95.7%) have been completed thus far this FY. The bulk of the non-completed classes are those that are required before access is allowed into the accelerator tunnel or enclosures.
- ◆ The Control Rooms monitor training completion prior to issuing a key. Individuals who have not completed the necessary training are denied access.
- ◆ The training completion rate is tracked on the Leading/Lagging indicators table.
- ◆ Weekly, the completion rates are given to senior laboratory managers at the Scheduling Meeting.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.1.3: Safety training is periodically reviewed and updated to ensure it is current and effective in meeting Laboratory employees' needs.

- ◆ Training is reviewed by the subject matter expert during audits as well as during FESHM updates.
- ◆ In addition, subcommittees of the Laboratory Safety Committee frequently review training as part of doing business.
- ◆ Feedback from the classroom evaluation forms are used to improve training materials.
- ◆ Recent reorganization in the ESHS has led to a review of both the ITNA and the training materials as they were migrated from the server to docdb.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.2.1: 90% of the scheduled LSC meetings are held and the minutes are posted within 10 working days of the meeting.

- ❖ 100% of the scheduled LSC meetings were held and all the minutes were posted within 10 working days of the meeting. [This exceeds the goal of 90%](#)
- ❖ Fermilab employees are very active in the ES&H program. In addition to the Laboratory Safety Subcommittee (LSC) in which employees participate, there are thirteen technical subcommittees that report to the LSC. Each of those subcommittees are made up of technical experts and interested “citizens”. The LSC meets on a monthly basis and is provided updates from the subcommittees on their activities. The meeting schedules of the subcommittees varies from bi-weekly to quarterly, with most meeting at least monthly.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.2.3.1: 90% of the meetings are conducted, with the end result that communication on key ES&H issues is enhanced. (FSO and the Laboratory will meet on a monthly basis to optimize communication between the two organizations on ESH&Q topics)**

- ◆ 92% of the meetings were conducted.
- ◆ This activity was quite successful. The monthly meetings provided time for uninterrupted discussions about timely topics. Topics ranged from standing agenda items such as progress on performance measures, to the status of implementation of 10 CFR 851 and ISO 14001 and OHSAS 18001 registration activities, to results of conferences attended, and ongoing DOE reviews. Minutes were kept, distributed and posted on docdb.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ **Target 5.2.4.1: The Laboratory Director conducts twelve routine management walkthroughs and/or meetings with division/section staff to discuss the importance of work planning to prevent accidents and injuries.**

- ◆ The Lab Director conducted 12 walkthroughs in eleven months, speaking to over 100 employees individually.
- ◆ Locations visited included space in all of the Divisions and Sections and one construction site.
- ◆ The Deputy Director accompanied the Director on several of these walkthroughs.
- ◆ The tours were very well received by Laboratory employees and scientists. It was an excellent opportunity for the Director to connect with the general population in the field.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ❖ **Target 5.2.4.2: Article of communication by senior laboratory management on an environment, safety, or health topic in *FermiToday* or a division newsletter on a monthly basis.**

- ❖ The Director and D/S/C heads routinely address ES&H elements in their corners of FermiToday.
- ❖ Several of the D/S/C published their own internal newsletters on a monthly or quarterly basis. In two of the operating divisions, the head sends out the newsletter electronically, with a statement about safety.
- ❖ In Fermilab Today there is a safety tip of the week. This tip is often written by an Associate Head of the ES&H Section.



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.4.2 (continued):

- ◆ During this fiscal year, a new communication tool was launched; the Take Five for Goal Zero campaign. In this case, both the Laboratory Director and the ES&H Director had articles in FermiToday rolling out the new initiative. There is a web page of tools associated with this campaign – linked from the Fermilab At Work web page.
- ◆ In June 2009 the laboratory hosted its inaugural Summer ES&H Fair. This fair was held in the atrium of the high-rise facility. There were a number of tables and experts on site promoting various ES&H topics. Specific items were given away at each table and larger items were raffled off throughout the fair. This initiative was well received by the laboratory employees.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.5.1: All divisions/sections will have updated their organizational ES&H Plans by the end of the review period.

- ◆ At the end of calendar year 2008, all of the Divisions and Sections at the Laboratory turned in the results of their CY2008 ES&H Plan. In addition, each Division and Section provided to the Director their updated ES&H Plan for CY2009.

#### Summary of the CY2008 Plan Results:

- ◆ Proposed actions were more succinct in CY08, but wider in scope, than in previous years.
- ◆ Year-end reports submitted by each D/S reveal that the CY08 actions were successful.
- ◆ There were fewer instances of failures or aborted actions than in past reports.
- ◆ Most of the planned actions were fully implemented and some were partially completed.
- ◆ The Directorate and the Office of the Chief Financial Officer prepared ES&H plans for the first time.



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.5.1 (continued):

#### Summary of the updated ES&H Plans for CY 2009:

- ❖ This calendar year Fermilab's divisions and sections planned >50 specific actions. Some of the categories included: environmental initiatives, communication, procedures, inspections, feedback, suggestions/recognition, HPI/Causal Analysis Training, and off the job safety.
- ❖ Nearly a quarter of the actions pertain to protection of the environment, and most of these involve recycling or collecting release inventories.
- ❖ Documentation/Procedure initiatives.
- ❖ Communication plans involve meetings and reports. Inspection/Feedback consists mainly of ongoing management walkthroughs, generally including an opportunity for one-on-one interactions between top managers and workers.
- ❖ HPI/Causal Analysis involve analysis of incidents and is a recognition of the Human Performance Improvement safety model.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.6.1: 90% of the HPR inspections will be performed on schedule.

- ◆ 83 buildings were scheduled for inspection during FY09
  - All HPR inspections have been conducted
  - 45 reports are completed and findings placed into ESHTRK (note: some reports have several buildings within them)
  - Remaining 4 reports are at the D/S for review, but are on schedule
- ◆ The findings represent very low level hazards and in many cases resulted in immediate abatement.
- ◆ Quarterly trending of the findings will continue and be reviewed for lessons learned and/or opportunities for improvement.
- ◆ Last year the HPR process was streamlined to provide feedback to senior management about the findings in their areas of responsibility.
- ◆ This method has been very well received by the customers.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.2.7.1: By September 30, 2009, develop a written plan for NEPA policy implementation:

- ❖ On March 3, 2009, DOE FSO formally issued the Report on Lessons Learned from the NOvA Project Experience with the DOE NEPA Process to the DOE Chicago Office and the Office of Science.
- ❖ As a result, in the first quarter of 2009, a web-based primer on NEPA and EA preparation, entitled 'NEPA NOTES' was developed and posted on the ES&H Website.
- ❖ In addition, an article, entitled From Oil Spill to Environmental Law was published on March 30, 2009 in the *Fermi Today* that discussed the origins of NEPA and provided an overview and links to additional resources including the above mentioned primer.
- ❖ Teri Dykhuis was formally appointed by the ES&H Director on June 11, 2009 as the principal Laboratory point-of-contact responsible for coordinating NEPA requirements.

Grade – B+



# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.3.1.1: 95% of proposed work will incorporate an environmental review through evaluation processes associated with Safety Assessment Documents, National Environmental Policy Act reviews, and Construction Reviews to identify opportunities to reduce hazardous and radioactive waste generation, maximize recycling and reuse, and to mitigate potential adverse environmental effects.**

- ◆ Through 8/28/09 there were 59 projects administered by FESS that were subjected to the Environmental Review Form (ERF).
- ◆ Fifty-five of the projects identified a potential environmental impact related to work.
- ◆ Eleven projects also had a waste minimization component identified.
- ◆ In 2009 the ERF became available to all divisions/sections for use.
- ◆ Permanent construction/demolition recycling dumpsters managed by FESS were staged around the site to accommodate smaller-scale T&M type projects.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.3.1.1 (continued):

- ❖ There were 9 projects that went through a formal NEPA review that included a commitment to pursue pollution prevention opportunities.
- ❖ In addition, all NEPA Environmental Evaluation Notification Forms now include the statement below which the Project Manager commits to upon signing the document.

"I hereby certify via my signature that every effort would be made throughout this project to pursue pollution prevention opportunities. Pollution prevention (source reduction and other practices that eliminate or reduce the creation of pollutants) is recognized as a good business practice which would enhance site operations thereby enabling the Lab to accomplish its mission, achieve environmental compliance, reduce risks to health and the environment, and prevent/minimize future DOE legacy wastes."

- ❖ These additional tools and steps in the program have proved successful in helping to ensure that environmental impacts and alternatives are considered early in the project planning cycle.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

- ❖ **Target 5.3.2.1: During the performance period, 95% of proposed experimental work involving the Fermilab User community will utilize environmental reviews through implementation of the Particle Physics Division's Operational Readiness Clearance process to identify opportunities to reduce hazardous and radioactive waste generation, to maximize recycling and reuse, to maximize opportunities to purchase products containing recycled materials, and to reduce the potential to create adverse environmental effects.**
  - ❖ A total of 16 ORCs or pORCs occurred as of August 2009.
  - ❖ All included a review for environmental impacts.
  - ❖ PPD used the process to confirm experiments were addressing environmental aspects, which are typically addressed prior to the readiness clearance.
    - Example: confirmation that propylene glycol replaced ethylene glycol from the MT6-Section 1 experiments.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 5.3.3.1: During the performance period, the Contractor develops a plan and schedule to evaluate opportunities to improve specific environmental aspects laboratory-wide, engage participation from each Division and Section in planned assessments and to document the assessment's results.**

- ◆ Eleven new Environmental Monitoring Plans (EMPs) have been developed. Each EMP seeks to improve a significant environmental aspect related to the operation of the lab.
- ◆ The EMPs have been developed by the divisions and sections having the greatest influence over the plan.
- ◆ These EMPs address federal sustainability objectives and were reviewed by DOE in the 3rd quarter of 2009 in conjunction with a re-validation audit of our EMS program.



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.3.3.1 (continued):

- ❖ An independent audit against Fermilab's implementation of the federal sustainability goals from EO 13423 was performed in April 2009. The lab was found in compliance in the development of our EMPs relative to Lab specific environmental aspects.
- ❖ The EMPs have measureable objectives and targets and are functionally tied to laboratory divisions and sections. Two Environmental Management System related tripartite assessments were also performed in the past year by TD and PPD respectively.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 5.3.4.1: Maintain the certificates of registration in ISO 14001 and OHSAS 18001 throughout this performance period.

- ◆ We have finished FESHM Chapter 3020 "Incident Investigation and Analysis" and are working on the Lessons Learned program; including a new chapter and a database to capture the lessons.
- ◆ In addition, we have started a "Continuous Improvement Log" that will track all of the things the D/S/C are doing to improve their ES&H programs. This log will eventually become a database that each D/S/C can populate independently.
- ◆ These documents were presented to the external auditors during the April 2009 surveillance visit and found to be an excellent system for documenting improvements. In their final report, Fermilab was recommended for continuance of the registration with NO major or minor non-conformances.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ES&H Contributions to other Labs/Facilities in FY09

Activity	Lab/Facility Involved (non-FNAL)
Peer Review of JLAB RadCon Program	JLAB
External Review Committee on Texas A&M Cyclotron Institute Upgrade Project Radiation Protection Program	Texas A&M University Cyclotron Institute
Independent Assessment of ANL Instrument Calibration Facilities	ANL
CARIBU Upgrade Accelerator Readiness Review	ANL
Share experience under ISO 14001/OHSAS 18001	ANL
Share methodology Fermi used to meet EO 13423 Env Mngmnt System requirements	JLAB
Shared FNAL Ergonomics program info, training and strategy	ANL
Participation in audit of the ANL emergency management program	ANL
Soudan Mine Operations - assisted in the development, planning and conduct of emergency drill	Soudan Mine

# Year End Review of Fermilab Performance

## Nancy Grossman

### ES&H Contributions to other Labs/Facilities in FY09

Activity	Lab/Facility Involved (non-FNAL)
Soudan Mine Operations - assisted in Review of Emergency Plans	Soudan Mine
Soudan Mine Operations - participated in HPR like inspection.	Soudan Mine
Provide information on the FNAL emergency plan and appendices to David Harris (SLAC Deputy Communications Director)	SLAC
Quarterly meeting with Kane County LEPC committee and emergency plan sub-committee (assisted in the writing/review of the Plan).	Kane County
Mentoring Fire Protection Issues	ANL
Mentoring Fire Protection Issues	ANL
Helping with DOE audit items for ANL Fire Dept	ANL
Cables and Plastic fire issues	Sanford Lab
Cables and Plastic fire issues	LLNL



Fermilab

PEMP Year-End Contract Measures Review



# Year End Review of Fermilab Performance

## Nancy Grossman

### ES&H Contributions to other Labs/Facilities in FY09

Activity	Lab/Facility Involved (non-FNAL)
Life Safety for Subterranean Spaces	DOE HQ
Life Safety for Subterranean Spaces	LLNL, BNL , Sanford Lab
Cables and Plastic fire issues	CERN
Life Safety for Subterranean Spaces	CERN
DOE Misc Fire Issues	DOE HQ and Chicago
Cables and Plastic fire issues	UL
General Fire Issues	JLAB
Exposure Monitoring Program - shared process, forms and database system used at Fermilab	ANL
Member of the SLAC LCLS advisory committee	SLAC



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Nancy Grossman

### ES&H Contributions to other Labs/Facilities in FY09

Activity	Lab/Facility Involved (non-FNAL)
Member of the DOE/EFCOG Electrical Safety Task Group	DOE
Member of the DOE/EFCOG Electrical Safety Site Assessment Team	DOE
Assessment of the status of their safety programs and activities	Pierre Auger Observatory in Malargue, Argentina
DOE Accelerator Safety Topical Group meeting	BNL
DOE Accelerator Safety Workshop	BNL
DUSEL/Stanford Cryogenic, Life Safety, & Ventilation Workshop	DUSEL
Discussed with LANL RSO interlock system redundancy issues with one of their proposed interlock systems	LANL



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### Awards the Laboratory received in FY09

Award	Section
OFFICE OF THE FEDERAL ENVIRONMENTAL EXECUTIVE - FEDERAL ELECTRONICS STEWARDSHIP 2008 Electronics Reuse & Recycling Campaign Winner- Midwest Medium Civilian Facility Category	BSS
2009 Federal Electronics Challenge Bronze Level Award.	BSS
National Safety Council Fleet Perfect Record Award	BSS
NSC Recognition of Significant Improvement Award to FERMILAB	FNAL
Secretary's (Samuel Bodman) Appreciation Award for contributions to the DOE Electrical Safety Improvement Project	Keith Schuh
NSC Million Person-Hour Award to ESH Section (1,000,000 person-hour plateau)	ESH
NSC Million Person-Hour Award to CD (3,000,000 person-hour plateau)	CD
FERMILAB Industrial Hygiene Employee of the Year Award (Internal)	BSS



Fermilab

**PEMP Year-End Contract Measures Review**

**Sept. 21, 2009**

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# Year End Review of Fermilab Performance



Cindy Conger



Fermilab



**PEMP Year-End Contract Measures Review**

**Sept. 21, 2009**

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# Year End Review of Fermilab Performance

## Cindy Conger

### ◆ Target 6.1.1.1: 97% of all vendors will be paid on time.

- ❖ During the 11-month period ended August 31, 2009, 99% of vendors have been paid on time, per the table below.

<b>Invoices Paid On Time</b>			
<b>FY09 First 11 months</b>			
<b>October 1 through August 31</b>			
	# of Invoices		
Invoices on:	Late Paid	Total	Percent
Standard p.o.'s	151	13,197	98.9%
Ordering Agreements	35	5,431	99.4%
Total invoices	186	18,628	99.0%

- ❖ The laboratory has exceeded the expectations of the measure throughout FY09 and expects no significant change with the addition of September data.

**Grade A-**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Cindy Conger

- ❖ **Target 6.1.1.2: 100% of major vendors will be paid on time. (A major vendor is defined as a vendor that provides services in excess of \$5,000,000 or more in a fiscal year or a vendor whose performance is so intricately tied to Fermilab performance that any interruption in service would impair Laboratory Performance.)**
  - ❖ All payments to major vendors were made on time during the 11 month period ended August 31, 2009.
  - ❖ The laboratory has met expectations under this measure and expects no change with addition of the September data.



Fermilab

**Grade B+**

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Cindy Conger

❖ **Target 6.1.2.1: The Laboratory's budget submission complies with all DOE guidance and is submitted in a timely fashion. The DOE annual budget validation reports no significant findings.**

- ❖ The laboratory's budget submission for FY11 was complete, compliant with DOE guidance, and was submitted on time in accordance with the due date of April 15, 2009.
- ❖ The DOE-CH Budget Validation has not yet been scheduled.
- ❖ The laboratory has met expectations under this measure.

**Grade B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Cindy Conger

- ◆ **Target 6.1.3.1: Costs are reported at the proper detail Budget and Reporting Classification account, Work Order, or Project Baseline Summary (PBS) level, as applicable.**
  - ❖ Of the \$332.7M of costs reported in FY09 through August 31<sup>st</sup>, .4% required Budget and Reporting (B&R) category reclassification after costs were first reported. (The Laboratory does not report at the work order or project baseline summary level.) No significant change in this percentage is expected with the addition of September data.





# Year End Review of Fermilab Performance

## Cindy Conger

- ❖ All transfers between B&R's were identified by Lab employees in their normal course of business.
- ❖
- ❖ Further, to date through August 31, 2009, testing related to OMB A-123, Management's Assessment of Internal Control over Financial Reporting , has found no deficiencies involving internal controls related to proper costing practices.
- ❖ The laboratory has met expectations under this measure.

**Grade B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Cindy Conger

- ◆ **Target 6.1.3.2: Costs do not exceed total budget authority provided in the contract. It is FSO's expectation that the Laboratory's budget execution fully addresses proper reporting of costs, proper management of uncosted balances and convincingly demonstrates those expectations and demonstrates no weaknesses.**
  - ❖ Costs did not exceed total budget authority provided in the contract at any time during the year.
  - ❖ The laboratory has met expectations under this measure.

**Grade B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Cindy Conger

### ◆ Target 6.1.4.1: No material findings

- ❖ There were no material findings reported in the first 11 months of FY09 resulting from financial audits, reviews, or other assessments or appraisals indicating weakness in the Lab's business and management control structure. No changes in this status are expected through September 30, 2009.
- ❖ There are no outstanding Corrective Action Plans at August 31, 2009 related to deficiencies found during OMB A-123 work, Management's Assessment of Internal Control over Financial Reporting, including results of the additional testing done for ARRA control purposes under the new, expanded Financial Management Assurance assessment rolled out by DOE-HQ in late FY09.
- ❖ The laboratory has met expectations under this measure.

**Grade B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



David Carlson



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.2.1.1: Comprehensive score of 90 out of 100

(Procurement BSC, p. 1/3)

- ❖ The FY2009 Procurement Balanced Scorecard Plan was submitted on 10/03/08 and approved by DOE on 3/26/09.
- ❖ The BSC consists of 10 Core Measures, consisting of 18 discrete Metrics, grouped in 4 Perspectives. Target scores are weighted by importance by DOE in the development of the plan. Achievement ranges for each metric are assigned various points.
- ❖ Expected Overall FY2009 Results: Current evaluation score= **95**; end of fiscal year results are expected to be **95**.

Perspective	Target for Max. Points	<u>11-Month Status &amp; YE Projected</u> Result	Earned / Maximum
1) Customer Perspective	92%	94%	15 / 15
2) Internal	various	(p. 2/3)	45 / 50
3) Learning and Growth	various	(p. 3/3)	10 / 10
4) Financial	≤ \$0.022	\$0.016	25 / 25
<b>Total</b>			<b>95 / 100</b>

**Grade = A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year-End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.2.1.1: Details of four Perspectives (Procurement BSC, p. 2/3)

Perspective	Target for Max. Points	11-Month Status & YE Projected	
		Result	Earned / Maximum
<b>1) Customer Perspective</b>	<b>92%</b>	<b>94%</b>	<b>15 / 15</b>
<b>2) Internal Perspective</b>			
a) Effective Internal Controls	95%	97%	14 / 14
b) Effective Supplier Management	84%	82%	1 / 2
c) Use of Effective Competition	60%	62%	6 / 6
d) Effective Use of Alternate Procurement Approaches			
– Actions placed by requesters	50%	<b>71%</b>	2 / 2
– Rapid purchasing techniques	55%	<b>74%</b>	2 / 2
– Awards through e-Commerce	29%	<b>50%</b>	2 / 2
e) Acquisition Excellence Through Timely Support			
– <\$100K	≤ 9 days	9 days	4 / 4
– >\$100K	≤ 32 days	25 days	4 / 4
– Overall	≤ 12 days	9 days	4 / 4
f) Good Corporate Citizenship Through Purchasing			
– Small Business		exceeded	- / -
– Small Disadvantaged Business		exceeded	- / -
– Woman Owned Business		exceeded	- / -
– HUBZone Business		not met	- / -
– Service Disabled Veteran Owned Business		not met	- / -
Subtotal f)			6 / 10
<b>Total for Internal Perspective</b>			<b>45 / 50</b>



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.2.1.1: Details of four Perspectives, continued (Procurement BSC, p. 3/3)

Perspective	Target for Max. Points	11-Month Status & YE Projected Result	Earned / Maximum
<b>3) Learning and Growth Perspective</b>			
a) Employee Satisfaction	90%	100%	3 / 3
b) Employee Alignment	98%	100%	7 / 7
<b>Total for Learning and Growth Perspective</b>			<b>10 / 10</b>
<b>4) Financial Perspective (cost per dollar purchased)</b>	<b>≤\$0.022</b>	<b>\$0.016</b>	<b>25 / 25</b>
<b>TOTAL BSC Score Projected, Target = 90 of 100</b>			<b>95 / 100</b> <b>Grade = A</b>

Summary: Customers are satisfied, compliance is at a high level, suppliers are performing well, competition is effective, innovative procurement approaches are being used effectively, procurement service is timely, socioeconomic achievements are strong, staff has opportunities to enhance professional knowledge/productivity/efficiency/effectiveness, and procurement costs have been consistently controlled and remain low.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Dave Carlson

- ◆ **Target 6.2.2.1: The Laboratory will timely submit required documents for Site Office review and/or approval which are complete, of a high quality and contain no critical issues.**
- ❖ Action: This situation has been controlled by implementing procedures within Procurement that require added management review and approval of procurement packages and advance notifications. Results this year appear favorable and no substantial issues have arisen.





# Year End Review of Fermilab Performance

## Dave Carlson

In addition, a self-assessment of internal controls was conducted to evaluate compliance with established policies and procedures. Activities spanning the entire procurement life cycle from sourcing through subcontractor evaluation were reviewed, including all purchase orders priced at \$50K or more that were awarded in FY2009. A checklist that thoroughly covers required purchase order activities was utilized. Compliance was 97% prior to corrective action, which exceeded the BSC internal control target of 95% or greater. The assessment confirmed that file organization and documentation was at a high level. Result exceeds expectations.

**Grade = A-** (exceeds expectations).



# Year End Review of Fermilab Performance

## Dave Carlson

- ◆ **Target 6.2.3.1: The Laboratory will identify at least two procurement areas for process improvements by March 31, 2009, will obtain DOE concurrence prior to implementation, and will complete their implementation prior to September 30, 2009.**
- ◆ Sole Source Justification Limit. The dollar level at which Sole Source Justifications are required was compared to other DOE laboratories and internal transaction volume. Approval from DOE was requested to increase the level from \$2,500 to \$5,000. Approval was given and the change was implemented prior to mid-year. This process improvement allows the technical and procurement staffs the opportunity to devote a greater portion of their time to more complex and higher dollar value acquisitions.



# Year End Review of Fermilab Performance

## Dave Carlson

- ❖ Advance Notifications to DOE. A system and procedure to send advance notification of sole source actions over \$100K to DOE electronically were developed to replace the paper form and manual approval process. Approval of this technique was obtained from the DOE CO. The new "Advance Notification Procedure" is finalized and ready to roll out to the procurement staff on target for execution.

**Grade = B+** (meets expectations)



# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Special Procurement Accomplishments for FY2009:

- 1) CAPS** (Center for Advanced Procurement Studies). Contributions were made once again by the Fermilab Procurement Manager through participation in a core procurement benchmarking planning, analysis and reporting group of 7 DOE and NNSA lab representatives, benefiting approximately 25 DOE contractors who participate in the actual benchmarking activity.
- 2) PERT** (DOE Procurement Evaluation and Re-Engineering Team). The Fermilab Procurement Manager was the Team Lead for the five-day review of the procurement system at Oak Ridge National Laboratory. Approximately 200 hours of effort went into organizing, conducting and reporting for this review.



# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.3.1.1: Comprehensive score of 90 out of 100

(Property BSC, p. 1/4)

- ❖ The **FY2009 Property Balanced Scorecard Plan** was submitted on 10/03/08 and approved by DOE on 3/17/09.
- ❖ The BSC consists of 26 discrete Targets across 4 Perspectives; 2 targets are not applicable this year being “off” for the 2-year equipment inventory cycle. Target scores are weighted by agreement with the DOE-FSO & CH.
- ❖ Expected FY2009 results: Comprehensive score = 99; maximum possible is 103 if all results exceed expectations, 92 if all results meet expectations.

Perspective	Max if Exceed	Max if Meet	Expected Results
• Customer	34	30	34
• Business Process	38	34	36
• Learning & Growth	20	18	20
• Financial	11	10	9
Total	103	92	<b>99,</b>



**Grade = A**  
Fermilab

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# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.3.1.1: Details of four Perspectives (Property BSC, p. 2/4)

Perspective	Target	11-Month Status & YE Expected Result
<b>1) Customer Perspective</b>		
a) Internal customer satisfaction	meet	exceeds
b) External customer satisfaction	meet	exceeds
c) Verification of sensitive property assignment		98%/99% 99.65%/99.90% (items/\$'s)
d) Verification of equipment property assignment		98%/99% 99.60%/99.68% (items/\$'s)
<b>2) Internal Perspective</b>		
a) Sensitive item inventory results	98%/99%	99.94%/99.99% (items/\$'s)
b) ISS Stockroom inventory results	99%/99%	99.69%/99.69% (items/\$'s)
c) Motor vehicles meeting usage standards	94%	98%
d) Increase assets disposed of within 180 days		PY+8% PY+7.62%
e) Increase assets sold using on-line systems	52%+x%	40%
f) Accountability for subcontractor-held property		100%



# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Target 6.3.1.1: Details of four Perspectives, continued (Property BSC, p. 3/4)

Perspective	Target	11-Month Status & YE Expected Result	
<b>3) Learning and Growth Perspective</b>			
a) Completed vs. Scheduled training supporting BSC	30%	plan changed	
b) Mgmt. employee development plans based of BSC	meet	100%	
c) Mgmt. employees annual reviews based on BSC	meet	100%	
<b>4) Financial Perspective</b>			
a) Decrease admin. costs for on-line sales	-	improved	
b) Trending decrease in admin. costs for on-line sales	-	improved	
c) Off-road trips taken by SUV's	94%	9.8%	
d) EO 13149 petroleum fuel use reduction	meet	exceeded	
i. Reduce petroleum consumption	-2%	-10%	
ii. Increase alternate fuel use		+14%	

**Total BSC Score Projected, Target = 90 of 100**

**99**

**Grade = A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ **Target 6.3.1.1: Comments on BSC targets not met** (Property BSC, p. 4/4)

#### **Internal Perspective**

- ❖ Increase of Disposal Actions within 180 Days (target 8% over FY2008). In FY2008, achieved 57.5%; so far in FY2009, 65.12%, just 0.38% short of target. Inhibiting factors: 1) Accumulation of economic batch quantities of electronics recycling works against this measure; 2) Change in sales process on e-Bay.
- ❖ Increase in Surplus Items Sold On-Line (target 10% over previous 2 years). Inhibiting factors include: 1) Exceptional success in FY2007 makes the previous 2-year average 52%, and we are achieving only 40% so far in FY2009. This problem also existed in FY2008.; 2) Change to mandatory use of Pay-Pal.





# Year End Review of Fermilab Performance

## Dave Carlson

### Learning and Growth Perspective

- ❖ Property Staff Complete Classes Related to BSC (target = 30%).  
Know Net II training DOE agreement with software provider was not entered into timely, but one employee attended NPMA National Education Seminar and the Property managers continue to participate in conference calls with DOE and other Office of Science facilities.

### Financial Perspective

- ❖ SUV Trips – Off Road (target = 94%). Achievement is approximately 10%. To mitigate this problem we are replacing SUV's with non-SUV's wherever possible; are down to 5.



# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ **Special Property & Fleet Management Achievements for FY2009;**

- ◆ Through diligent effort by the Vehicle Maintenance and Fleet Management staff, Fermilab obtained twenty-four (24) vehicles provided by non-contract funded ARRA program, greatly advancing the Laboratory toward achievement of transforming the vehicle fleet to 100% Alternative Fueled Vehicles, in support of DOE's *Transformational Energy Action Management* initiative.
- ◆ Award: Office of the Federal Environmental Executive - Federal Electronics Stewardship 2008 Electronics Reuse & Recycling Campaign Winner- Midwest Medium Civilian Facility Category. This award was made in FY2009 for activities from October 1, 2007, through September 30, 2008. Federal facilities competed to see who could reuse and recycle the most computers and other electronics. The award was presented at the White House.



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# Year End Review of Fermilab Performance

## Dave Carlson

- ❖ Award: 2009 Federal Electronics Challenge Bronze Level Award. Presented to Fermilab in FY2009 for FY 2008 FEC accomplishments). This is a "repeat" award.
- ❖ Award: National Safety Council Fleet Perfect Record Award. Presented to BSS Transportation Department for the period 11/1/2007 and continuing.
- ❖ Fermilab Property Manager greed to proctor NPMA exam for ANL property management staff.



# Year End Review of Fermilab Performance

## Dave Carlson

- ◆ **Target 6.3.2.1: The Laboratory satisfactorily and timely resolves concerns/issues identified as a result of DOE's oversight and/or internal self-assessment.** (Fleet Management)
- ❖ Internal Self-Assessment. Specific Fleet Management measures that are part of the Personal Property BSC and reported under Target 6.3.1.1 were specially monitored:
  - Utilization: The first six months for FY2009 indicated **93%** achievement vs. the requirement of **94%**. The Fermilab Fleet Utilization Committee monitored and acted on this concern. Year end result is expected to be **98%**.



# Year End Review of Fermilab Performance

## Dave Carlson

- Petroleum Fuel Reduction: Excellent results. The Laboratory exceeded annual petroleum consumption reduction requirements and alternative fuel increased usage requirements contained in Executive Order 13423, Strengthening Federal Environmental, Energy and Transportation Management Efficiency. The requirement is **2%** and actual reduction is at **10%**.
- SUV Off-Road: See report for 6.3.1.1. We are down to five (5) SUVs with one more going away soon. Depends on GSA replacement allocations.

**Grade = A-**



Fermilab

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# Year End Review of Fermilab Performance

## Dave Carlson

◆ **Target 6.3.2.2: All Vehicle Management reporting procedures are effectively implemented and data submitted to DOE is accurate, complete and timely.** (Fleet Management)

- ❖ General Reporting and Data Calls. Fleet utilization and motor vehicle procedures are being effectively implemented and data submitted to DOE is accurate, complete and timely. **Grade = B+** (meets expectations)
- ❖ Accident Reports – DOE oversight concern/issue: During FY2008 there was a lapse in submission of full and final SF-120 vehicle accident reports to DOE-FSO. Management reinforced the importance of reporting requirements, and required reports have been and continue to be sent to DOE as soon as they are finalized.

**Grade = B+** (meets expectations)



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# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Other Special BSS Accomplishments for FY2009:

**Foreign Travel Assistance to National Laboratories.** Fermilab provided frequent support to ORNL on foreign travel issues, and assisted JLab and BNL on several complex foreign travel issues. Fermilab also assisted SLAC with obtaining clearance for foreign travel for a key participant/instructor approximately 3 days before departure to China for the International School for Linear Colliders.



# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Other Special BSS Accomplishments for FY2009:

#### **Information Resources Contributions to the Physics Community.**

- ❖ Added over 750 records to SPIRES database and included links to full-text scans for old papers (conference proceedings, SSC reports, etc.) and added over 100 links to full-text for records already in SPIRES.
- ❖ Substantially advanced the HEP Jobs and HEP Names databases, receiving dozens of accolades from the world physics community.
- ❖ Hosted the 3<sup>rd</sup> Annual HEP Information Summit, a meeting of INSPIRE (CERN, DESY, Fermilab and SLAC), the other infomatinio services (NASA/Harvard Astrophysical Database System, Cornell Eprint Arxiv, LBL Particle Data Group, Thomson-Reuters ISI), and the HEP publishers (APS, Elsevier, Springer).



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# Year End Review of Fermilab Performance



Kay Van Vreede



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# **Year End Review of Fermilab Performance**

## **Kay Van Vreede**

- ◆ **Target 6.4.1.1: Analysis and determination of succession plan best practices through research of a minimum of six national laboratories or comparable business plans and the determination of Laboratory specific planning needs through discussions with no fewer than 75% of Laboratory Associate Directors; and, by September 30, 2009, submittal of a draft Laboratory Succession Plan incorporating the results of these analyses to the Laboratory Directorate for approval.**



# Year End Review of Fermilab Performance

## Kay Van Vreede

- ❖ Research was conducted to identify best current practices through professional association materials, articles and books.
- ❖ Discussions were held with 10 national laboratories and 2 corporations.
- ❖ Discussions centered on current programs as well as implementation experiences.
- ❖ 100% of the Associate Directors, Lab Director, Lab Deputy Director, COO, CFO, CIO were interviewed.
- ❖ Results of the interviews were summarized.
- ❖ A succession plan process was drafted and submitted to the Directorate on August 28.



# Year End Review of Fermilab Performance

## Kay Van Vreede

- ❖ The plan includes: purpose, elements, the FY10 succession planning process, discussion guidelines for the succession planning meeting, and the planning forms.

❖ **Grade A**



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# Year End Review of Fermilab Performance

## Kay Van Vreede

◆ **Target 6.4.2.1:**      **The Laboratory will successfully develop an R2A2 format and prepare a minimum of 15% of the number of R2A2 documents determined to be applicable after the completion of an internal analysis of Laboratory positions.**

- ◆ Developed an R2A2 format.
- ◆ Conducted analysis of Laboratory positions and determined how many R2A2s were needed.



# Year End Review of Fermilab Performance

## Kay Van Vreede

◆ **Target 6.4.2.1: The Laboratory will successfully develop an R2A2 format and prepare a minimum of 15% of the number of R2A2 documents determined to be applicable after the completion of an internal analysis of Laboratory positions.**

- ◆ Eighteen R2A2s will be written.
- ◆ Eight (or 44%) have been written as of August 31, 2009.

◆ **Grade A**



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# Year End Review of Fermilab Performance

## Kay Van Vreede

- ◆ **Target 6.4.3.1: The Laboratory will successfully complete appropriate scientific hiring procedures incorporation into the Laboratory hiring processes, train a minimum of 75% of scientific managers who regularly hire scientists in those procedures, and use the procedures for a minimum of 60% of all new scientific hires.**
  - ❖ Using a task force of scientists who most frequently hire scientists at all levels, procedures were developed that incorporated HR procedures into scientific hiring.
  - ❖ Flow charts were developed for easy understanding.



# Year End Review of Fermilab Performance

## Kay Van Vreede

- ❖ Scientists experienced value-added services through the addition of: a post-doc website, informational interviews with all candidates, and recruiting assistance.
  - ❖ 95% of all hiring scientists were trained as of August 31, 2009.
  - ❖ As of August 31, 2009, the new procedures were used for 100% of open scientific positions.
- ◆ This goal was exceeded in all aspects. Not only were procedures developed but HR value-added services were included also. Goals for training and usage were far exceeded.

**Grade A**



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# Year End Review of Fermilab Performance

## Kay Van Vreede

◆ **Target 6.4.4.1: The Laboratory will successfully complete the staffing of seven Diversity Council committees, which combined will include at least 2% of the entire Laboratory employee population, and which will reflect the overall diversity of the Laboratory's staff.**

- ◆ All Diversity Council committees are staffed.
- ◆ 72 or 3.7% of all employees participate in committees.
- ◆ 9.7% of all women employees participate.



# Year End Review of Fermilab Performance

## Kay Van Vreede

- ❖ 11.6% of all minority employees participate.
- ❖ In addition, many other employees were involved with specific events.

**Grade A-**



Fermilab

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# Year End Review of Fermilab Performance

## Kay Van Vreede

◆ **Target 6.4.5.1: The Laboratory will successfully implement a minimum of two Diversity Council committee recommendations.**

- ◆ Two employee resource groups were organized – GLOBE and Unity Coat.
- ◆ The Council organized several events including the Diversity Fair, International Human Rights Month, Black History Month, and Asian Heritage Month.



# Year End Review of Fermilab Performance

## Kay Van Vreede

- ❖ A mentoring program was developed as proposed by the Committee for Hiring and Retaining Technical Staff. *Fermilink* is an on-line mentoring program that can be used by all employees.
- ❖ A recruiting DVD is under development.

**Grade A-**



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**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Alicia Filak



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# Year End Review of Fermilab Performance

## Alicia Filak

- ◆ **Target 6.5.1.1: Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.**
  - ❖ Successfully passed DOE-OIG's tests of Internal Audit's implementation of the Annual Allowable Cost Audit, including compliance with Professional Audit Standards and implementation of the TeamMate automated workpaper system.
  - ❖ Worked with Management, the DOE Site Office and OIG representatives to promptly address the DOE-OIG's expectation regarding evaluation of questionable costs.



# Year End Review of Fermilab Performance

## Alicia Filak

- ◆ **Target 6.5.1.1: Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.**
  - ❖ Successfully passed DOE-OIG's tests of the Cooperative Audit Strategy across the complex including general audit management, planning and implementation of the IA program.
  - ❖ Internal Audit's effectiveness is monitored through verbal and written communications with the FRA Board of Directors Audit Committee.



# Year End Review of Fermilab Performance

## Alicia Filak

- ◆ **Target 6.5.1.1: Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.**
  - ❖ Additional accomplishments increase the effectiveness of IA through peer interaction and use of professionally accepted quality standards.
    - Served as Team Member of Sandia National Laboratory Internal Audit Peer Review.





# Year End Review of Fermilab Performance

## Alicia Filak

- ◆ **Target 6.5.1.1: Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.**
- ❖ Member of the Contractors Internal Audit Directors (CIAD) Professional Standards Subcommittee – Worked behind the scenes to promote adoption of The Institute of Internal Auditors (IIA) Quality Assurance Manual (QAM) for conduct of peer reviews across the complex. FRA Internal Audit will be first site where the IIA's new QAM will be used by CIAD to conduct a review.



# Year End Review of Fermilab Performance

## Alicia Filak

### ❖ **Target 6.5.1.1: Demonstrate effective Internal Audit and Oversight (IA) as assessed through external reviews, surveys and inspections of IA.**

- ❖ Increased interaction and information sharing with IA at Argonne.
- ❖ Instructor for Fermilab's Management Practices training program to convey the purpose of the IA function to new supervisors.

**Grade A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Alicia Filak

### ◆ **Target 6.5.2.1: Approved Internal Audit Plan and substitutions are accomplished and open Internal Audit findings are effectively tracked and resolved in a timely manner.**

- ◆ Planned audits and substitutions will be completed as agreed.
- ◆ An additional audit (FRA, LLC Annual Allowable Costs) will be completed.
- ◆ OMB Circular A-123 Testing was performed to facilitate timely Management reporting to the DOE.



# Year End Review of Fermilab Performance

## Alicia Filak

### ◆ **Target 6.5.2.1: Approved Internal Audit Plan and substitutions are accomplished and open Internal Audit findings are effectively tracked and resolved in a timely manner.**

- ❖ Unexpected high priority Financial Management Assurance internal control testing was done to facilitate Management reporting to the DOE.
- ❖ An evaluation of the supplemental life accounting error was completed to provide Management with suggestions to strengthen controls.



# Year End Review of Fermilab Performance

## Alicia Filak

- ◆ **Target 6.5.2.1: Approved Internal Audit Plan and substitutions are accomplished and open Internal Audit findings are effectively tracked and resolved in a timely manner.**
  - ❖ A review of personal Conflict of Interest Statements was performed.
  - ❖ Fiscal year end audit assistance will be provided to facilitate KPMG's independent external audit. Internal Audit will lead the coordination and expeditious completion of year end inventory counts.



# Year End Review of Fermilab Performance

## Alicia Filak

◆ **Target 6.5.2.1: Approved Internal Audit Plan and substitutions are accomplished and open Internal Audit findings are effectively tracked and resolved in a timely manner.**

- ❖ Progress continued to be made tracking and closing internal audit findings in a timely manner.
- ❖ Actively pursued opportunities to promptly close findings during fieldwork.

**Grade A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Bob Grant



Fermilab



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# Year End Review of Fermilab Performance

## Bob Grant

◆ **Target 6.5.3.1: Complete the lab-wide “As-Is” quality assurance baseline activity (gap analysis) and the resultant Corrective Action Plan on an approved schedule.**

- ◆ “AS-Is” baseline activities are complete
- ◆ Analysis of gaps and writing of the Corrective Action Plan has been completed in accordance with the plan
- ◆ All milestones on the approved schedule have been met
- ◆ DOE is routinely briefed on the status of the QA implementation





# Year End Review of Fermilab Performance

## Bob Grant

- ◆ **Target 6.5.3.2: Appoint, train, and activate Quality Assurance Representatives to support the implementation of the Quality Assurance Program and work toward full compliance with DOE Order 414.1c under the approved IQAP and graded approach.**

Bakul	Banerjee	QAR
Frank	Cesarano	QAR
Nicole	Gee	Extended QAR
Tim	Miller	Extended QAR
Jim	Rife	QAR
Don	Rohde	QAR
Keith	Schuh	QAR
Rod	Walton	QAR
Jim	Wollwert	Extended QAR



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**This metric has been completed**

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# Year End Review of Fermilab Performance



Vicky White



Fermilab



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# Year End Review of Fermilab Performance

## Vicky White

### ◆ **Target 6.5.4.1: Business System Information Technology (IT) projects in excess of \$500,000 achieve 90% of the schedule, budget and technical milestones specified in the Approved Project Plan.**

- ❖ There is one Business Systems IT project in excess of \$500K in 2009: Fermilab Time & Labor (FTL) to automate employee time and effort reporting.
  - In February 2009 the MIS department, responsible for executing the project under the Approved Project Plan, came into the Computing Division (CD) under an Associate Lab Director for Computing Science and Technology and CIO (acting), as part of a lab IT restructuring initiative;
  - An Operational Readiness Review of FTL (as a lab-wide service and set of business processes) was conducted as part of due diligence of new management;
  - A decision to implement central authentication of users was taken by the new management;
  - As a result of these two factors the Project Plan schedule and technical milestones was adjusted in April 2009.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Vicky White

### ◆ Fermilab Time & Labor (FTL) to automate employee time and effort reporting: status and plans

- ◆ Operational Readiness Review very useful for assessing the status of the technology and the level of maturity of the business processes associated with labor time and effort.
- ◆ All Exempt Employees have now been deployed
  - TD – deployed as planned in Mar '09;
  - CD – deployed as planned in May '09;
  - PPD – deployed as planned in Jul '09;
  - AD – deployed as planned in Aug '09;
  - Completed more than two months ahead of May 2009 schedule.
- ◆ Nonexempt Employees – phased deployment planned thru mid-FY10.



# Year End Review of Fermilab Performance

## Vicky White

### ◆ **Target 6.5.5.1: FY 2010 business system Information Management (IM) plans are in alignment with the Laboratory's Strategic Plan and are in place by September 30, 2009.**

- ❖ The Computing Division maintains a Strategic Information Systems Plan (SISP) for business computing at the Laboratory
- ❖ The SISP has two principal components: a Strategic (long range) Plan and a Tactical (short range) Plan
  - The Strategic Plan deals with meeting the future business information needs of the Lab
  - The Tactical Plan deals with meeting short range business information needs
- ❖ The FY 2009 Strategic Plan is in place and is being implemented.
- ❖ The FY 2010 Strategic Plan was developed in concert with the Computing Division's strategic planning and budget process and will be put in place by September 30, 2009
- ❖ A new governance structure for Information Management and IT investments and projects is being developed beginning September 30, 2009. The portfolio of IM and IT projects will be prioritized for execution in FY2010, based on resources available for IM and IT in the Fermilab FY2010 budget.



# Year End Review of Fermilab Performance

## Vicky White

### ◆ Target 6.5.6.1: The business system IM products and services meet customer requirements as demonstrated by 88% positive customer feedback.

- ❖ The Computing Division conducts formalized Customer Satisfaction Meetings with its “key” business customers on an annual basis
  - 15-20 participants
  - Senior Laboratory management, business leaders, and Div/Sec representation from all areas of the Laboratory
  - Review and prioritize systems projects and agree upon metrics and measures of importance
- ❖ Review past year’s IM performance, and identify future opportunities
- ❖ Formal questionnaire to solicit feedback and assess performance
  - A series of 10 questions on IM products and services
  - Responses measure satisfaction on a scale of 1 to 5 (1=Poor, 5=Excellent)
  - Results are benchmarked against prior years’ results, and reviewed by CD management and staff
  - Items warranting follow up are assigned and tracked electronically for resolution
- ❖ Composite service level rating for IM for 2008 was 4.75/5.0. The service level rating for 2009 is not yet complete, but is expected to approximate that of last year.



# Year End Review of Fermilab Performance

## Vicky White

### ◆ **Target 6.5.7.1: The business system IM projects are completed as identified in the IM plans and demonstrate measurable improvement and cost effective services and products.**

- ❖ The MIS Tactical Plan for 2009 identified 22 business system Information Management (IM) projects, some of which required additional budget to achieve:
  - 12 of these projects are expected to complete in 2009;
  - 10 projects will not be done in 2009
- ❖ For 2010 all IM and core services IT projects will be examined and prioritized lab-wide based on their potential to
  - Make the lab's operations and management functions more efficient
  - Support the strategic goals of the lab
  - Provide cost savings over the next five years
  - Reduce risk of dependency on unsupported or outdated technologies for business functions and core IT services of the lab



# Year End Review of Fermilab Performance



Ed Temple



Fermilab



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# Year End Review of Fermilab Performance Ed Temple

◆ **Target 6.5.8.1: The Laboratory completes the EVMS Readiness Assessment, On-Site Review, and Corrective Action steps, working to achieve certification by September 30, 2009.**

- ◆ Pre-Meeting; Nov 6 2008; OECM, OPA (Lehman SC-28)
- ◆ Readiness Assessment; Jan 9, 2009; OECM, Tecolote, OPA
- ◆ EVMS Internal Readiness Assessment; Jan 12-16, SM&A



# Year End Review of Fermilab Performance Ed Temple

## ❖ Training

- EVMS for Lab Management, Feb 6, 2009
  - 2-Day Certification Training, Dec 3-4, 2008 mainly NOvA
- ❖ Submitted required pre-Review documentation, Apr 3, 2009
- ❖ DOE EVMS Certification Review held the week of May 11, 2009
- ❖ CAP (Corrective Action Plan) submitted in May, approved in June. Some CAP items complete; all to be complete by Oct 1.



# Year End Review of Fermilab Performance



Bruce Chrisman



Fermilab



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# Year End Review of Fermilab Performance

## Bruce Chrisman

◆ **Target 6.6.1.1: All intellectual assets deployed through license agreements, option agreements or technology assistance agreements resulting in royalty income or license income is used according to the DOE approved Royalty Plan and funds are accounted for and audited in accordance with requirements.**

- ◆ The laboratory has not received any license income during the review period.
  - There is only one active license agreement in place.

◆ **GRADE B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Bruce Chrisman

- ◆ **Target 6.6.1.2: The Laboratory takes a proactive approach to public outreach through such activities as maintaining current information on its Web pages, conducting presentations, issuing press releases and newsletters and distributing up-to-date pamphlets.” (1)**
  - ❖ The Fermilab Web site is updated daily with news and information. The laboratory will launch an all-new home page and "public" Web site on April 21 with updated content and architecture.
  - ❖ Fermilab manages the US LHC Web site, the Interactions.org Web site, and the new Quantum Diaries Web site.
  - ❖ Fermilab manages the production of symmetry magazine and the online "symmetry breaking"
  - ❖ Fermilab presents an annual lecture series for the public on topics in particle physics and astrophysics.



# Year End Review of Fermilab Performance

## Bruce Chrisman

◆ **Target 6.6.1.2: The Laboratory takes a proactive approach to public outreach through such activities as maintaining current information on its Web pages, conducting presentations, issuing press releases and newsletters and distributing up-to-date pamphlets.” (2)**

- ❖ Fermilab recently issued its first press release with embedded video content.
- ❖ Fermilab Today, the laboratory's daily online newsletter, reaches 5,000+ "outside" subscribers in addition to all laboratory employees.



# Year End Review of Fermilab Performance

## Bruce Chrisman

- ❖ Fermilab includes local communities in planning the laboratory's future through public participation in Citizen Task Forces
- ❖ Fermilab established an ARRA web site to inform the public of progress on implementing the portion of the ARRA funds assigned to Fermilab.

❖ **GRADE A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Randy Ortgiesen



Fermilab



**PEMP Year-End Contract Measures Review**

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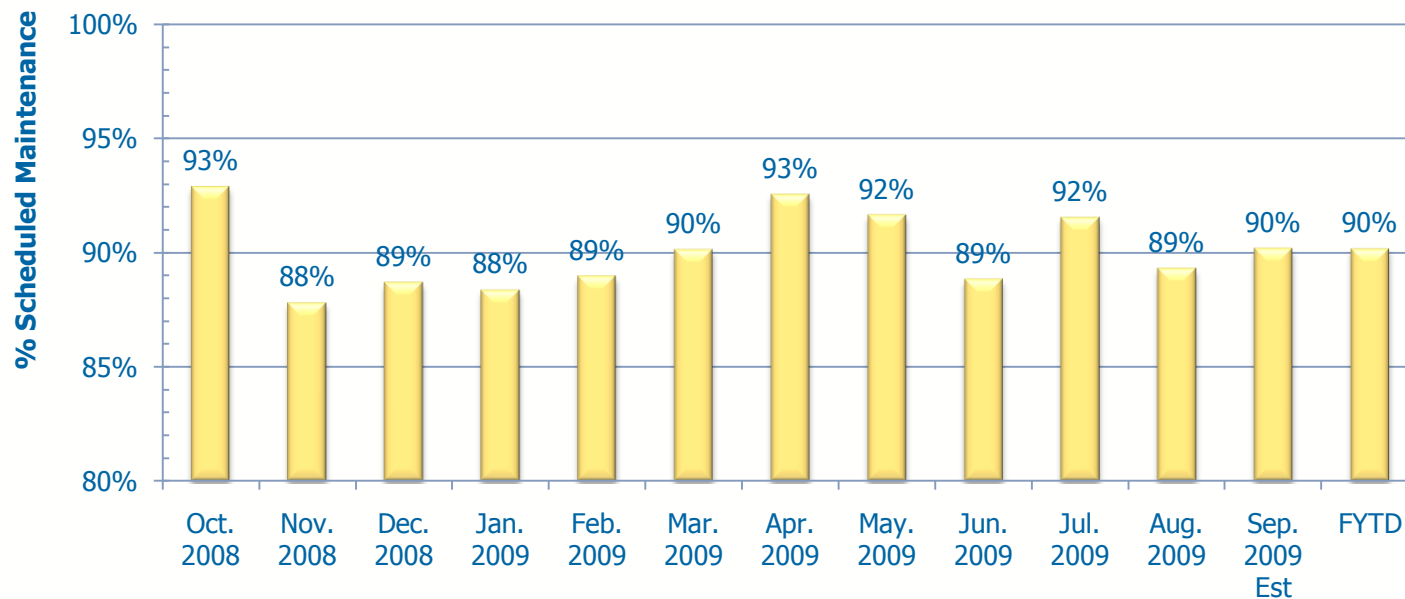


# Year End Review of Fermilab Performance

## Randy Ortgiesen

◆ Target 7.1.1.1: > 80% **Expect to meet target**

### Scheduled Maintenance FESS - Operations DOE Measure 7.1.1.1



Fermilab

PEMP Year-End Contract Measures Review

# Year End Review of Fermilab Performance

## Randy Ortgiesen

- ◆ **Target 7.1.2.1: Documentation is provided that validates the readiness of existing facilities and infrastructure to carry out the assigned scientific missions as evidenced by: peer review; critical maintenance funding properly allocated and effectively spent, and summary tables within the mission readiness report, which show improvement in existing facilities and/or infrastructure (e.g. have moved upward on the scale from “not capable” through “marginal” and “partial” to “capable”).**

Fermilab developed a process, completed the Mission Readiness (MR) baseline review, and submitted summary results as a component of the 2009 Lab Business Plan. In preparation for a Fermilab MR peer review, FESS participated in reviews at ORNL and PNNL. Maintenance continues to be funded adequately at approximately 2% of facility RPV, with spending verified through quarterly reporting. SLI project expected to receive CD-0

**Expect to meet target at year end**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Randy Ortgiesen

### ◆ Target 7.1.3.1: > 90%

◆ Project:	Milestone:	Met?
◆ DWS Loop to Wilson Hall	Construction Start	Yes
◆ Batavia Rd. Sec. Upgrades	Engineering Start	Yes
◆ Feeders 37 & 30 Upgrades	Construction Comp.	Yes
◆ Site 50/52 Sanitary Sewer	Engineering Comp.	Yes
◆ FCC Cooling Upgrades	Engineering Start	Yes
◆ NML Expansion	Engineering Start	Yes
◆ MI-8 Expansion	Engineering Start	Yes
◆ High Availability Computing Center	Engineering Start	Yes
◆ Wilson Hall Generator	Engineering Start	Yes
◆ IB-3 Addition	Engineering Start	Yes
◆ MINU	Construction Start	Yes
◆ Batavia Road Security Upgrades	Construction Start	Yes

100% of milestones achieved –target met



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Randy Ortgiesen

- ◆ **Target 7.1.4.1: An acceptable finalization of the FY08 Executable Plan, which adequately addresses the site's contribution to meeting the Agency-wide goals of the TEAM initiative and Executive Order 13423, is developed after a period of consultation with DOE and is submitted to DOE for approval no later than December 31, 2008. In addition, 90% the actions identified in the finalized plan for completion in FY09 are accomplished on schedule.**
  
- ◆ Executable Plan Approved
  - ❖ 1. Energy Efficiency



# Year End Review of Fermilab Performance

## Randy Ortgiesen

- Fermilab will complete the DES review and construction/acceptance support required to complete DOE's ESPC initiative to increase energy efficiency on site by the end of the year.
- We are up-to-date on completing all of the DES reviews submitted to FSO (Phase 2 is now in preparation) and have provided timely technical support to Ameresco in developing their ECMs plus review of their 851 Safety Plan. Under DOE's direction and timing, Fermilab has now completed all of the DES reviews and given all the support needed to move this project forward. It is now at the DOE ESPC Review Board acceptance stage at DOE HQ, but execution remains entirely under DOE control.



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Randy Ortgiesen

### ❖ 2. Renewable Energy

- Fermilab will procure green power Renewable Energy Credits needed to meet 3% of the total annual electric power consumed.
- We have directed DESC to procure RECs for 13,500MWh to cover Fermilab's FY09 needs and are awaiting bids to be received by DESC. Fermilab in coordination with FSO and DESC has completed the procurement of RECs to cover FY09 requirements.

### ❖ 3. Water

- Fermilab will complete its assessment of the domestic water use on site and develop recommendations to meet the TEAM goals.
- Fermilab has completed its assessment of domestic water use to identify problem areas and made improvements. Reassessed total water usage and have exceeded the 16% goal.



# Year End Review of Fermilab Performance

## Randy Ortgiesen

### ❖ 4. Transportation/ Fleet Management

- Fermilab will establish contracts for the delivery of B5 and B20 biodiesel fuel and begin its usage in operating the fleet on site.
- We have established the contracts and are now using biodiesel fuel in Fermilab's vehicle fleet. (Note - We have also ordered 10 AFV vehicles toward replacing all of our 61 gasoline vehicles by the end of 2010 and hope to get ARRA money shortly to replace even more this year.) There have been no adverse effects from our use of biodiesel fuels. Fermilab has received its full order of AFVs and 10 of the 24 ARRA vehicles. Only 20 more AFVs needed in FY10 to met the goal



# Year End Review of Fermilab Performance

## Randy Ortgiesen

### ❖ 5. High Performance & Sustainable Buildings

- Fermilab will begin its assessment of the CDF and D-0 office buildings to make recommendations for consideration in meeting the TEAM goals. The assessment work is now under contract and FESS new hires are slated to assist with execution of this work.
- We have received proposals to conduct assessments of the CDF and D-0 Office buildings.

◆ 100% of goals achieved –target met



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**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Randy Ortgiesen

### ◆ Target 7.2.1.1: $\geq 80\%$

- ❖ MINU – programmatic and excluded, but in TYSP
- ❖ Batavia Rd. Security upgrades – special DOE request, NA to TYSP
- ❖ NML Expansion – ARRA; in TYSP
- ❖ FCC Cooling Upgrades – ARRA; in TYSP as Computing Cooling Improvements
- ❖ IB-3 Addition – ARRA and not in TYSP
- ❖ High Availability Computing Center – ARRA; in TYSP
- ❖ Wilson Hall Generator Replacement – ARRA and excluded; in TYSP
- ❖ MI-8 Expansion – ARRA and excluded; in TYSP as MI-65 Expansion

Target met - 7 GPP in TYSP/8 projects total = 88%



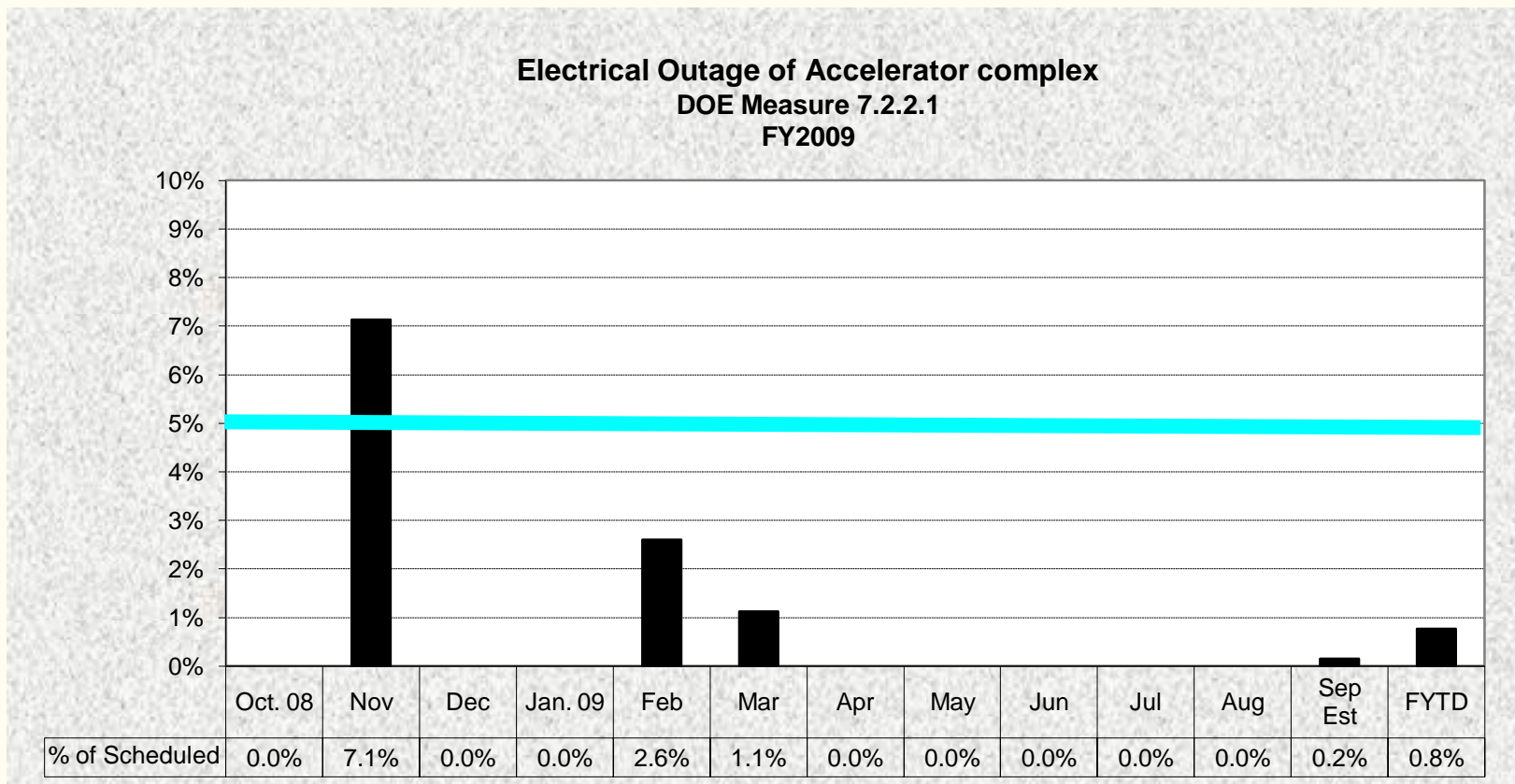
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# Year End Review of Fermilab Performance

## Randy Ortgiesen

◆ **Target 7.2.2.1: < 5%** **Target expected to be met**



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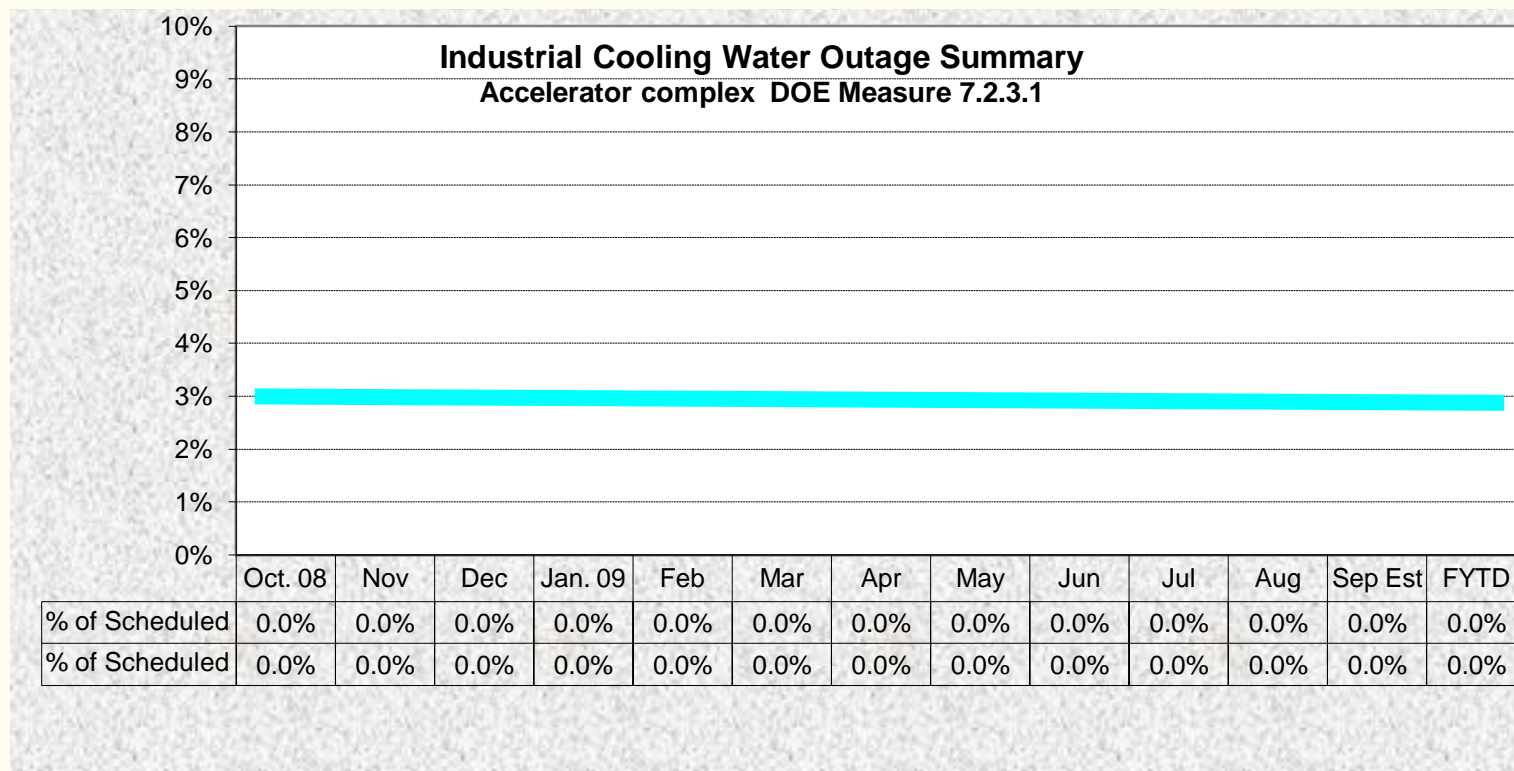
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# Year End Review of Fermilab Performance

## Randy Ortgiesen

◆ **Target 7.2.3.1:  $\leq 5\%$  Target expected to be met**



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# Year End Review of Fermilab Performance



Vicky White



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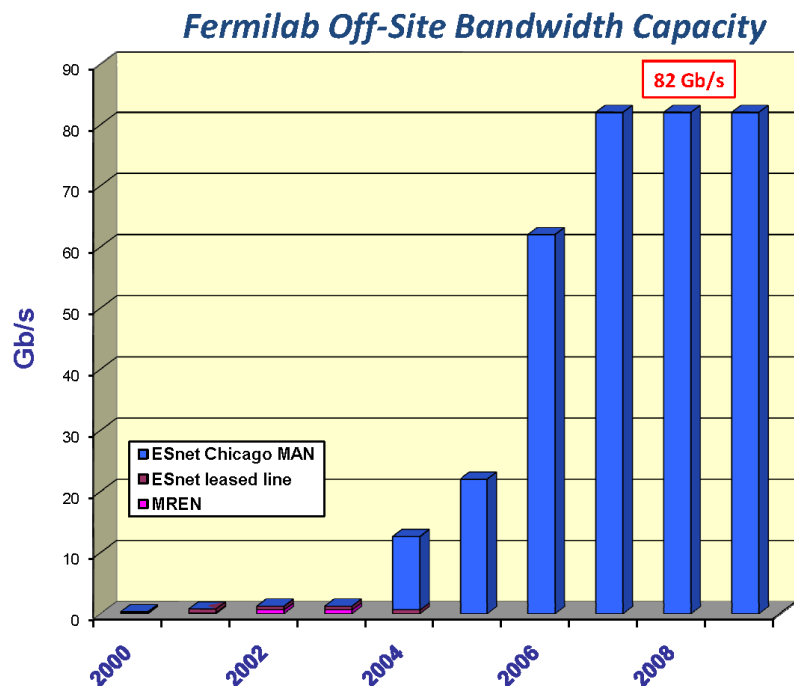
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# Year End Review of Fermilab Performance

## Vicky White

### ◆ Target 7.2.4.1: Internet Bandwidth is either maintained or improved



Off-site bandwidth increased by factor of 4 over past 4 years

- Supporting high data movement requirements of experiments
- Scalable MAN architecture provides cost-effective growth path for future needs



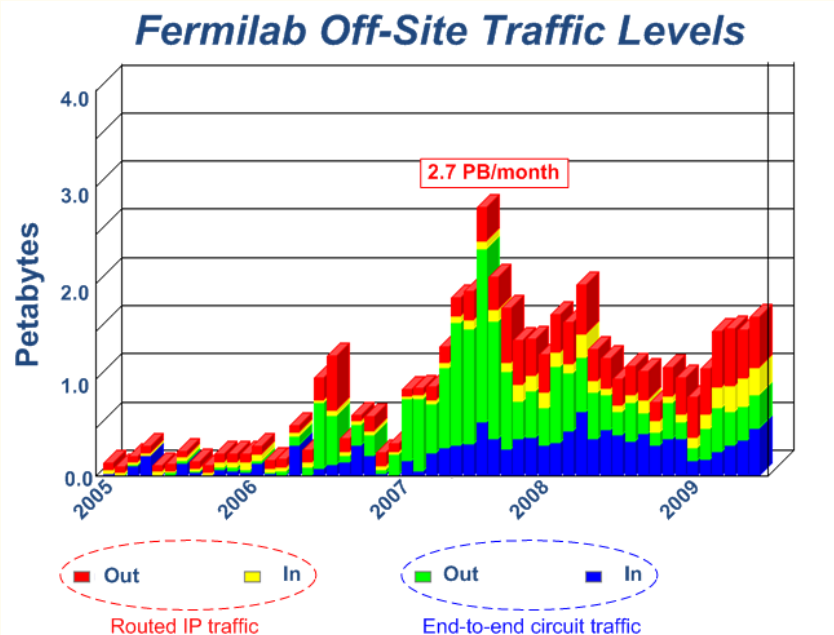
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# Year End Review of Fermilab Performance

## Vicky White

### ◆ Target 7.2.4.1: Internet Bandwidth is either maintained or improved



Pioneering in use of data circuits:

- ◆ 14 end-to-end circuits deployed
- ◆ Isolates high impact (LHC) data movement from general internet
- ◆ Provides predictive bandwidth

WAN-related R&D efforts:

- ◆ Lambda Station path selection service
- ◆ Structured WAN performance analysis methodology
- ◆ perfSONAR network performance monitoring service



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# Year End Review of Fermilab Performance



Nancy Grossman



Fermilab



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# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ **Target 8.1.1.1: 90% of emergency management findings from approved Tripartite reports and/or drill critiques scheduled for completion during the performance period are completed as scheduled.**

- ❖ No Lab emergency management findings have been identified so far during this performance period.
- ❖ This continued reduction in the number and severity of the findings indicates a maturation of the emergency response program.
- ❖ Lesson's learned from the power outage in November of 2008 and from the H1N1 preparations in May 2009 have been incorporated into the emergency planning procedures (more details to follow)

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**



# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 8.1.2.1: Annually conduct at least one EOC exercise.

- ◆ We did have an actual event on 11/5/09, a power loss to the site.
  - EOC was “activated”, but not initially
  - “Hotwash” occurred: the Lab reviewed the timeline, procedures, the process and updated procedures as necessary (hotwash documented)
  - We will take credit for this
- ◆ Additionally, the EOC staff has been officially assembled in order to address, in a planning format, the upcoming H1N1/09 flu season. This has been a large effort and has showed the strength of our EOC team and our ability to organize and prepare for an emergency situation.

**Grade – A**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 8.1.2.2: Annually conduct at least two facility drills per occupied building (tornado and fire evacuation).

- ◆ 64 total occupied buildings – thus requiring 128 drills
  - Completed 64 tornado drills
  - Completed 50 fire drills
- ◆ Balance of drills will be completed prior to the end of FY09.
- ◆ Additionally, several drills were conducted in non-required buildings:
  - 8 Fire
  - 12 Tornado
- ◆ One chemical spill drill was also conducted in August 2009

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ **Target 8.1.2.3: All occupied buildings have the Local Area Emergency Plans (LAEPs) posted and those are maintained, up-to-date and meet all requirements for LAEPs.**

- ◆ 100% of Occupied Building Local Area Emergency Plans have been submitted.
- ◆ Each plan has been reviewed by the Emergency Coordinator, feedback has been given and revisions made. All plans are posted in the relevant buildings or areas.
- ◆ Field validation of posting and content occurs during HPR inspections

**Grade – B+**



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**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Vicky White



Fermilab



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# Year End Review of Fermilab Performance

## Vicky White

### ◆ Target 8.2.1.1: < 20 hours

- The amount of time that the Tevatron did not run, CDF/D0 experiments could not take data, or business systems were unable to operate that is attributable to a successful cyber attack was **zero** hours.



# Year End Review of Fermilab Performance

## Vicky White

### ◆ Target 8.2.2.1: $\leq 1$ TB

- The amount of experiment data that was irrecoverably lost attributable to a successful cyber attack was **zero**.



# Year End Review of Fermilab Performance

## Vicky White

- ◆ **Target 8.2.3.1: The Laboratory will complete actions in Plans of Actions and Milestones (POA&Ms) on or ahead of schedule.**
  - ◆ All POA&Ms due in FY2009 were completed ahead of schedule.



# Year End Review of Fermilab Performance

## Vicky White

- ❖ **Target 8.2.4.1: Each NIST system categorized as having moderate impact will have at least 90% of its moderate level controls assessed each fiscal year. Summary results will be provided to the DOE Designated Approval Authority (DAA) on an annual basis.**
- ❖ There are currently four NIST systems categorized as having moderate impact. During FY09:
  - Two systems have had 100% of their controls assessed.
  - Two systems are having their assessments completed this month.





# Year End Review of Fermilab Performance

## Vicky White

❖ **Target 8.2.5.1: 90% of the Computer Security staff, Desktop Administrators, System Administrators, and computer users will complete role- specific computer security training each fiscal year.**

- ❖ 100% of the Computer Security staff completed training (23/23)
- ❖ 93% of the Desktop Administrators completed training (379/408)
- ❖ 96% of the System Administrators completed training (273/285)
- ❖ 92% of the general computer users completed training (1172/1272)
- ❖ Training is handled online through the lab's TRAIN system



# Year End Review of Fermilab Performance



Nancy Grossman



Fermilab



**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Nancy Grossman

### ◆ Target 8.3.1.1: 100% compliance with the Fermilab Nuclear Materials Control and Accountability Program Implementation Plan.

- ◆ 100% compliance with the current Laboratory Nuclear Materials Control and Accountability Program Implementation Plan.
- ◆ Self-assessments and DOE reviews continue to find the program to be 100% in compliance.
- ◆ This program was assessed by DOE as part of the Safeguards and Security Survey of Fermilab March 9-12, 2009. A rating of "satisfactory", the highest level awarded, was achieved.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Nancy Grossman

◆ **Target 8.3.1.2: All Nuclear Material Control and Accountability (MC&A) Program and MC&A Procedures are updated to reflect current laboratory operations during the review period.**

◆ These updates continue to be completed.

**Grade – B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Dave Carlson



Fermilab

**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Dave Carlson

- ◆ **Target 8.3.2.1: Planned quarterly walkthroughs by Fermilab security of PPAs find access card readers working properly and employees and users inside the PPAs wearing badges  $\geq 97\%$  of the time.**

Security Officers conducted walkthroughs of all PPA's in all quarters of FY2009:

- ❖ **Q1 (12/08-12/14/09):** 1230 badges properly displayed out of 1239 persons observed (**99.3%**). One door on the east wall of CDF was found ajar; the Locksmith checked and adjusted door closer for proper operation.



# Year End Review of Fermilab Performance

## Dave Carlson

- ❖ **Q2** (03/25-03/31/09): 1112 badges properly displayed out of 1115 persons observed (**99.7%**). It was reported that both the north and south doors on the east wall of CDF were not closing and latching automatically; the Locksmith replaced both door closers with units having stronger closing pressure.
- ❖ **Q3** (06/08-06/15/09): 1151 badges properly displayed out of 1152 persons observed (**99.9%**). The card reader door at CHL was found to be malfunctioning; repaired.
- ❖ **Q4** (09/01-09/07/09): Final results not reported due to staff absence, but 100% of persons observed during first 3 days were properly displaying badges.
- ❖ **Overall FY2009 result projected to be 99.7%.**

**Grade = A-** (exceeds expectations).



# Year End Review of Fermilab Performance

## Dave Carlson

- ◆ **Target 8.3.3.1: The Laboratory provides effective support toward the management of DOE's prime security contract.**
  - ❖ Weekly staff meetings between Fermilab and the TPS Site Operations Manager were instituted to improve communications. Topics included officer safety, training progress of new hires, officer recruitment status, special event staffing, and suggestions made by TPS officers. Several patrol changes were instituted as a result of officers' suggestions.
  - ❖ Fermilab Security staff conducted 3 site-specific training classes in FY2009, for a total of 9 new TPS security officers.





# Year End Review of Fermilab Performance

## Dave Carlson

- ❖ Prior to the DOE S&S Inspection, Fermilab Security staff coordinated facilities and resources for TPS/ARES to stage training on the Fermilab site. Training covered vehicle stops, OC spray use, and handcuffing.
- ❖ Fermilab provided 3 squad cars to TPS. In order to minimize down time, the FRA security staff, in cooperation with TPS SOM and officers, instituted a rigorous vehicle inspection program. Fermilab staff coordinates preventative and required maintenance. It appears that this more rigorous inspection regimen has reduced unexpected down time. In Q4, one of the 3 vehicles was replaced with a heavier duty vehicle with lower mileage.
- ❖ Fermilab staff assisted DOE with the extension of the TPS contract, incorporating changes to improve performance of the security force. Fermilab will provide all training.

**Grade = A-**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Dave Carlson

### ◆ Other Special Security Accomplishments for FY2009:

- ❖ Received "Satisfactory" rating on DOE S&S Survey, March 2009 (no Findings).
- ❖ Replaced aging video management system with new digital system.
- ❖ Major progress on implementing new guard tour tracking system (FELIX).
- ❖ Installed and upgraded intrusion detection systems.
- ❖ Updated SSP, added GCC to list of PPA's.
- ❖ Chaired the Traffic Safety Subcommittee of the LSC.
- ❖ Enhanced security for WDRS for WH-15 and Daycare Center.



# Year End Review of Fermilab Performance

## Bruce Chrisman/Dave Carlson

- ❖ BSS/Property and Inventory Control Department maintains a list of high risk assets that are in Fermilab's possession, and makes use of the ORNL webside and the Australia Group website for purchase order screening and HR property identification. Disposition of HR or assets that may contain proprietary information is handled under strict procedures including witness of destruction. Fermilab also engages the services of an attorney specializing in export control. Property staff have taked DOE non-proliferation training.
- ❖ There were no instances of export control violations to date in FY2009.
- ❖ 100% of HR assets were accounted for.
- ❖ Fermilab does not possess any sensitive technology transfer information.

**Grade = A-**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance



Bruce Chrisman



Fermilab



**PEMP Year-End Contract Measures Review**

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# Year End Review of Fermilab Performance

## Bruce Chrisman

- ◆ **Target 8.4.1.1: Maintains a list of any export control items that are in Fermilab's possession and a list of any sensitive subjects, reports on any events involving protection of sensitive and technology transfer information or export control items, and mitigates these as necessary.**
- ❖ The Fermilab BSS Property and Inventory Control Department maintains a list of all high risk/export controlled property (258 items). The Property Office is currently in the process of verifying 100% of all the high risk/export controlled property. There have been no adverse events involving protection of these assets.



# Year-End Review of Fermilab Performance

## Bruce Chrisman

- ❖ There have been no instances of export control violations during the first 11 months of FY2009.
- ❖ Fermilab does not have sensitive technology transfer information.

**GRADE B+**



Fermilab

**PEMP Year-End Contract Measures Review**

# Year End Review of Fermilab Performance

## Bruce Chrisman

- ◆ **Target 8.4.2.1: All laboratory employees are provided an annual CI reporting requirements briefing and special annual CI presentations are made available for employees to attend.**
  - ❖ The CH-CI approved annual training memorandum is routinely sent to all in the third quarter of each fiscal year. Memorandum approved by DOE-CH-CI and sent to all employees 8/11/09.
- ◆ **GRADE B+**



# Year End Review of Fermilab Performance

## Bruce Chrisman

### ◆ Target 8.4.3.1: Provides hosts for UFVAs complete annual security briefings which prepare them to effectively perform their responsibilities.

- ◆ All approved hosts receive annual training.
  - The training needs up-dating and we are awaiting a draft script for this from CH-CI
  - It was agreed with CH-CI that we need more hosts, and we agreed the new hosts would be the audience for a new training video.
- ◆ The Security review conducted by CH found no deficiencies in the UFVA program.

### ◆ **GRADE B+**



Fermilab

**PEMP Year-End Contract Measures Review**